

S/588/61/000/004/009/011  
D234/D303

9.7300

AUTHOR: Zverev, A.Ye.

TITLE: A device transforming linear quantities into the "DP" digital code

SOURCE: Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, no. 4, Moscow 1961, 324 - 338

TEXT: The author describes a new transmitter of small linear displacements with a high power of resolution which allows the conversion of analogue quantities into discrete ones within the range of displacements of the executive organ of a machine tool (several meters). It is stated that the transmitter was developed at the Department of Mathematical Machines of MVTU. The transmitter consists of two optical rules, a micro-objective situated between these and a photomultiplier. The object rule is displaceable; the second rule and the objective are fixed. Operation of the transmitter is described and design formulas are given. Technology of manufacture of the rules is also described. There is a dependence between the accuracy

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A device transforming linear ...

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of division of the rules and the accuracy of the transmitter; the author gives graphs of distribution of errors in divisions for several rules manufactured at the Zavod koordinatno-rastochnykh stan-kov (Factory of Coordinate Machining Tools) in Moscow. There are 9 figures and 16 references; 9 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: P.I. Farmer, "Fairley-Ferranti", Aircraft Production, no. 5, v. 20, 1958; G.G. Bower, Analog to Digital Computers, Control Engineering, no. 11, April 1957; H.B. Harrison, B.A. Horlock and F. D. Hunt, The inductosyn and its application to a programmed coordinate table, Electronic Engng., June 1957; Hayes Diomaster Machine with Ferranti Electronic Positioning System, Machiner (L), v. 89, no. 2277, 1956. ✓B

ACC NR: 187002989

APPROVED FOR RELEASE: Thursday, September 26, 2002  
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CIA-RDP86-00513R002065710003-7  
CIA-RDP86-00513R002065710003-7

SOURCE CODE: UR/0113/66/000/024/0087/0088

INVENTORS: Zverev, A. Ye.; Mironenko, A. V.

ORG: none

TITLE: Converter of angular displacements into digital code. Class 42, No. 189624

SOURCE: Izobreteniya, promyshlennyye obrasty, tovarnyye znaki, no. 24, 1966, 87-88

TOPIC TAGS: analog digital encoder, angle measurement instrument

ABSTRACT: This Author Certificate presents a converter of angular displacements into digital code. It contains a measuring and indicating screen or diffraction grating, a photocell, and an illuminator. To increase the conversion accuracy, to decrease periodic and cumulative errors in the spacing of the sequence of lines on the measuring disk and in its uniform warmup, the converter contains one or several (e.g., three spaced at 120°) electromagnetic mechanisms with tangential displacement and torsional oscillation windings connected respectively to dc and ac sources (see Fig. 1). The armatures of the electromagnetic mechanisms are rigidly coupled to an indicator plate or indicator disk with another lined track.

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UDC: 681.142.07:621.8.025

ACC NR: 127002969

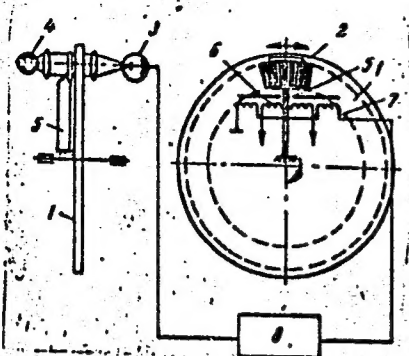


Fig. 1. 1 - measuring grating;  
2 - indicator grating; 3 - photo-  
cell; 4 - illuminator; 5 - electro-  
magnetic mechanism armature;  
6 - tangential displacement  
winding; 7 - torsional oscillation  
winding; 8 - shaper

Orig. art. has: 1 diagram.

SUB CODE: 09/

SUBM DATE: 05May65

ZVEREV, A.Ye., aspirant

Structural characteristics of the converter of linear displacements to the digital code. Izv.vys.ucheb.zav.; mashinostr. no.12:162-168 '61. (MIRA 15:2)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Bauman.

(Electronic digital computers)

Analyzing the precision of the DP converter of minor linear  
displacements of the numerical code. Izv.vys.ucheb.zav.; prib.  
4 no.5:84-93 '61. (MIRA 14:10)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.  
Rekomendovana kafedroy matematicheskikh mashin.  
(Electronic digital computers)

32554  
S/145/61/000/012/007/007  
D221/D302

9,7300

AUTHOR: Zverev, A. Ye., Aspirant

TITLE: Some design features of a converter of linear displacements into numerical code

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 12, 1961, 162-168

TEXT: The analogue-to-digital converter designed by the Department of Mathematical Machines at MVTU im. N. E. Bauman is described. The experimental device can be divided into the following units: Measuring device (converter); pulse separator; reversible counter and decoder. The measuring device, connected in the general feedback, is a photoelectric system in the form of two optical rules. The encoder ДП (DP) contains a light source, optical system of the counting ray, projector with correcting elements, and the recorder. The displacement slide is actuated by a d.c. motor and reducer. Its reversal is ensured by contactors (Ш-1564 (Sh-1564), ГОСТ (GOST) 3899-58). The screen rules can be adjusted in three planes.

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Some design features ...

The two objectives of the prototype are replaced by a prism. The final variant of the converter has only one source of illumination, usually a strobotron. The disadvantages consist of low power of illumination and short life, as well as high control voltage. A two-lens condenser is used in the illuminating system for an increase of the enveloping angle. The new variant has an improved efficiency by forming a narrow ray of light approaching the width of rule marking. There are no cross distortions because only two rays are projected on the screen rule. The micro-objective and the correction lens provide the final formation of the light ray. The width of the latter is the main limiting factor of the resolving capacity in the system. The additionally illuminated graduations of the object-rule do not affect the system as they are projected beyond the screen rule. The photomultiplier  $\phi 3Y-31$  (FEU-31) with a high threshold sensitivity is employed for recording. The information pulses from the magnetic tape and the converter (feedback) are random in time. A pulse distribution is provided for eliminating errors in the reversible counter. The separation time is so chosen as to ensure normal operation. The circuit of the rever-

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Some design features ...

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sible counter includes four digital and one sign trigger, two multi-vibrators and one control trigger. The state of the latter determines whether the operation is addition or subtraction. Valves provide the additional control depending on the sign of the input signal. The required delay is secured with one monovibrator OD-1 (OD-1). The decoder consists of two identical circuits working in succession, depending on the state of the sign trigger in the reversible counter. Its operation is based on the summation of currents, so that the output voltage of the amplifying valve is proportional to the input code. The voltage steps can have an amplitude of several volts. The coils of the electric machine amplifier form the load of the output stages. The negative feedback consisting of a tachogenerator, and a loop provides the stabilization of the system. There are 3 figures and 2 Soviet-bloc references.

ASSOCIATION: MVTU im. N. E. Baumana (MVTU im. N. E. Bauman)

Card 3/3

9,7300  
S/146/61/004/005/007/011  
D221/D305

AUTHOR: Zverev, A.Ye.

TITLE: Analysis of accuracy in the conversion of small linear displacement into a digital code by the (DP) converter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 4, no. 5, 1961, 84-93

TEXT: The paper is devoted to analyzing accuracy in the operation of analog-to-digit conversion, where the error is due to deviations in the actual values of element parameters from their calculated magnitudes. Only the errors caused by the dynamic actions within the element are being considered. The simplified diagram of a DP converter is shown in Fig. 1. It comprises two scales, an illuminator and a correcting optical device, as well as an electronic part. The motion of the object-scale produces a displacement of the light over the screen scale, and modulates the photo-

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Analysis of accuracy...

cell output. A plot is given of the relationship between the projection of the fascicle of light rays which passes through the graduation apertures of the object-scale ( $\phi$ ) and the thickness of the marking  $\phi$ , for different values of the constant magnification coefficient  $\beta$ . The lower limit of  $\phi$  is controlled by the accuracy of reading required, and by the condition of reliability of conversion  $b - d > \phi'$ . The difference in the intensity of light should be greater than the absolute value of the threshold signal. Two equations are quoted which determine the relationship between  $\phi'$  and  $\phi$ . These equations take into account the distance between the image plane and the rear aperture diaphragm, the diameter of the output micro-objective, the length of the light wave, and in one expression also the coefficient of diffraction. The reduction of graduation width causes a widening of the null maximum over the screen rule, whereas its enlargement brings closer the minima towards the center of the screen aperture, and the null maximum becomes more sharp. The resolving capacity of optical counting depends on the length of the light wave only, and the diffraction diffi-

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Analysis of accuracy...

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culties appear when the aperture is below  $4 \mu$ . Both rules are made of glass with small linear expansion coefficient of the types of quartz, "пирекс" (pireks), etc. Other optical properties of glass are not important. The rules were graduated at the Leningradskiy optiko-mekhanicheskii zavod (Leningrad Optical and Mechanical Plant) and the distribution of pitch errors was investigated. The description is given of plotting curves of errors which are used to determine the permitted limits in pitch errors. A plot is also illustrated of the coefficient  $\gamma = \frac{b-d}{\phi}$ , determined by the ratio

of  $t_p$  and  $T_t$  which are respectively the duration of pulse and the period between the pulses. The various machining and assembly inaccuracies result in changes of the magnitude in the light measured at the output. In the ideal case the total amount of light beam is given by  $F_b = \frac{F'_3 h d}{\beta^2}$ , where  $F'_3 = \frac{F_3}{s_{g1}}$ ;  $F_3$  is the light beam

falling on the screen rule;  $s_{g1}$  is the area of graduation on the

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Analysis of accuracy...

object-rule;  $s_{g2}$  is the area of screen-rule graduation [Abstracter's note: It appears that  $h_2$  in the equation should read  $s_{g2}$ ];  $\beta$  is the magnification coefficient. This is followed by a mathematical analysis of the increment of light beam  $\Delta F_b$ . Graphs are shown indicating the relationship between the latter and the size of individual errors. From above, the following conclusions are made. There are errors which affect little the total light beam, such as deviations in the form of workpiece ( $\Delta x$ ), temperature etc, or those which are important. The last category comprises errors in the pitch of the object-rule, misalignment of graduations etc. The distribution of pitch errors permits the selection of rule for a given conversion quantity, and thus determines the possible read-out  $\delta$ . The over-all dimensions of the analog-to-digital converter provides the specification for  $\beta$ . These two quantities determine the pitch of the screen rule  $b$ . The pitch of object-rule  $a$ , is governed by the technological considerations and the light sensitive area of the photo cell. The width of graduations  $\phi$ , is

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D221/D305

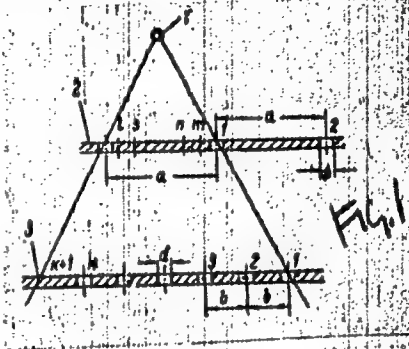
Analysis of accuracy...

given by graphs, whereas a table provides the values of  $t_p$  and  $T_p$  for a given  $V$ . This article was recommended by the Kafedra matematicheskikh mashin (Department of Mathematical Machines). There are 6 figures, 2 tables and 8 Soviet-bloc references.

ASSOCIATION: Moskovskoye vyssheye tekhnicheskoye uchilishche im. Bauman (Moscow Higher Technical College im. Bauman)

SUBMITTED: February 13, 1961

Fig. 1.  
The basic diagram  
of the converter



ZVEREV, Aleksandr Yevgen'yevich; KURGANOV, Viktor Dmitriyevich;  
ZVEREV, S.A., dots., red.

[Electron-tube and transistor pulse signal amplifiers; a  
textbook] Elektronnye i poluprovodnikovye usiliteli im-  
pul'snykh signalov; uchebnoe posobie. Moskva, Mosk.  
aviatsionnyi tekhnologicheskii in-t, 1965. 219 p.  
(MIRA 18:11)

**TOLSTOV, A.: ZVEREV, B.**

On the construction sites of the Krasnoyarsk Economic Region.  
Stroitel' no.3:3 Mr '60. (MIRA 13:6)

1. Nachal'nik upravleniya stroitel'stva Krasnoyarskogo sovnarkhoza (for Zverev). 2. Spetsial'nyy korrespondent zhurnala "Stroitel' (for Tolstov).  
(Krasnoyarsk Territory--Construction industry)



ZHEREKHOV, N., polkovnik; ZVEREV, B., kand.istoricheskikh nauk, kapitan.

Immortal feat of Russian soldiers; on the 100th anniversary of the  
heroic defense of Sevastopol. Voen.vest. 34 no.10:11-25 O '54.  
(MIRA 10:10)

(Sevastopol--Siege, 1854-1855)

"Voyaging on the seas" by IU. Davydov. Reviewed by B. Zverev.  
Geog.v shkole 20 no.4:76-77 J1-Ag '57. (MIRA 10:7)  
(Matiushkin, Fedor Fedorovich, 1799-1872)  
(Davydov, Yu.)

KOLTAKOV, L.G., inzh.; ZVEREV, B.A.

Boring of reactor tubes. Khim.mash. no.1:41-42 Ja '60.

(MIRA 13:5)

(Chemical engineering—Equipment and supplies)  
(Polyethylene)

ROLOSOV, M.I., kand.tekhn.nauk; STROGANOV, A.I., kand.tekhn.nauk; KEYS,  
N.V., inzh.; BOGATENKOV, V.F., kand.tekhn.nauk; VAYNSHTEYN, O.Ya.,  
inzh.; DANILOV, A.M., inzh.; ZVEREV, B.F., inzh.; ANTROPOVA, N.G.,  
inzh.; KHRYUKINA, V.A., inzh.

Use of silicon-chromium in open-hearth smelting of steel, *Stal* 20  
no. 7:607-608 J1 '61. (MIRA 14:5)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii;  
Chelyabinskiy i Zlatoustovskiy metallurgicheskiye zavody.  
(Steel—Metallurgy) (Silicon-chromium alloys)

BOGATYENKO, V.P.; VASILEVA, O.Ya.; POLOV, S.S.; KOLOSOV, M.I.; LUBENETS,  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710003-7  
I.A.; MOROZOV, A.N.; POVOLOTSKIY, D.Ya.; STROGANOV, A.I.

Desiliconization of open-hearth pig iron in the mixer. Izv. vys.  
ucheb. zav.; chern. met. 4 no.8:32-36 '61. (MIRA 14:9)

1. Chelyabinskiy metallurgicheskiy zavod, Chelyabinskiy nauchno-  
issledovatel'skiy institut metallurgii i Chelyabinskiy politekhnich-  
eskiy institut.

(Cast iron--Metallurgy)

BOGATENKOV, V.F.; VAYNSHTEYN, O.Ya.; ZVEREV, B.F.; FIRSOV, S.G.

Improving the method of phosphorus removal during steel smelting.  
Metallurg 6 no.11:11-13 N '61. (MIRA 14:11)

1. Chelyabinskiy metallurgicheskiy zavod i Chelyabinskiy  
nauchno-issledovatel'skiy institut metallurgii.  
(Steel--Metallurgy)

STROGANOV, Anatoliy Il'ich; PETROV, Aleksey Konstantinovich;  
ZVEREV, Boris Fedorovich; SVET, Ye.B., red.; KUZNETSOVA, O.Ya.,  
tekhn. red.

[Economy of magnesite in steel smelting] ~~Ekonomiya magnézita v~~  
staleplavil'nom proizvodstve. Cheliabinsk, Cheliabinskoe knizh-  
noe izd-vo, 1962. 41 p. (MIRA 16:1)

(Smelting furnaces--Maintenance and repair)  
(Refractory materials)

1962  
1-1  
Cheliabinsk  
tekhn. red.

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X-ray diffraction study of irradiated polyamides. Plast. massy  
no.1:33-36 '65. (MIRA 18:4)



ZVEREV, B.I., kand. istoricheskikh nauk, podpolkovnik

Mikhail Vasil'evich Frunze's work for strengthening the combat  
power of the Soviet Navy. Mor. sbor. 48 no.1:24-33 Ja '65.  
(MIRA 18:4)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 . CIA-RDP86-00513R002065710003-7  
APPROVED FOR RELEASE: Thursday, September 26, 2002 . CIA-RDP86-00513R002065710003-7"  
AFANAS'YEV, A.M.; PAVLOV, S.A.; KARPOV, V.L.; ZVEREV, B.I.

X-ray diffraction study of modified polyamides. Plast. massy no.2,32-  
34 '65. (MIRA 18:7)

ZVEREV, B.I., kand. istoricheskikh nauk, podpolkovnik

leninist concern for the rehabilitation and building of the  
navy. Mor. soor. 47 no.4:10-18 Ap '64.

(MIRA 18:7)

AFANAS'YEV, A.M.; PAVLOV, S.A.; KARPOV, V.I.; ZVEREV, B.I.

X-ray diffraction examination of polyamide films cast from  
irradiated solutions. Plast. massy no.4:52-55 '65.

(MIRA 18:6)



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ACC NR: AP6013597

on the basis of AG-salt-SC-salt and epsilon-caprolactum in a 1:1:1 ratio, was also used in the study. It was concluded that the introduction of considerable quantities of trivalent chromium salts into a solution of mixed polyamides results in the loss of crystallinity of the film material obtained. The action of gamma radiation up to 200 milliroentgen doses does not cause substantial changes in structure. Further, when the content of the chromium chloride in the polyamide is insignificant its action is expressed in the fixation of the structure formed; when the content is high, it is expressed in the opening of the chains and blocks of macromolecules and in the disturbance of their ordering. Finally, the introduction of glycerine accelerates the loss of crystallinity of the polyamide S-6 during radiation but at a lower rate than the radiation-caused changes of the mechanical and other properties of this polyamide. The structure of polyamides AK 50/50 and S-6, even after addition of a plasticizer, exhibits considerable stability in the action of radiation in the dose range up to 500 milliroentgen dose. Orig. art. has: 2 figures and 3 tables. [JPRS]

SUB CODE: 11, 18 / SUBM DATE: none / ORIG REF: 009

Card 2/2 *MS*

BOGATENKOV, V.F.; VAINSTEIN, O.I. [Vavnshteyn, O. Ya.]; ZVEREV, B.F.; KOLOSOV,  
M. I.; LUBENET, I. A. [Lubenets, I.A.]; MOROZOV, A. N.; POVOLOTKY, D.I.  
[Povolotskiy, D.Ya.]; STROGANOV, A.I.

Desilicification of Martin iron in mixers. Analele metalurgie 16 no.1:  
21-27 Ja-Mr '62.

STROGANOV, A.I., kand.tekhn.nauk; BOGATENKOV, V.F., kand.tekhn.nauk;  
KOLOSOV, M.I., kand.tekhn.nauk; ZVEREV, B.F., inzh.; DAVIDYUK,  
V.N., inzh.; POPOV, R.V., tekhnik

Heat balance of the riser head of an ingot. Stal' 22 no.1:27-29  
Ja '62. (MIRA 14:12)

(Steel ingots) (Heat--Transmission)



8/133/50/000/007/0034/016

**THEORETICAL, Biol', 1960, No. 7, pp. 607 - 608**

Card 1/3

Card 2/3

Card 1/3

ANASHKIN, I.A., kapitan 1 ranga; BARABOLYA, P.D., polkovnik yuridicheskoy sluzhby; VOLKOV, A.S., inzh.-kapitan 1 ranga; VOROB'YEV, A.P., kapitan 1 ranga; VASIL'YEV, I.V., kapitan 1 ranga zapasa; V'YUNENKO, N.P., kand.voyenno-morskikh nauk, kapitan 1 ranga; GENKIN, A.L., dotsent, kand.tekhn.nauk, inzhener-kontr-admiral; YEREMENKO, B.Ya., kapitan 1 ranga; ZVEREV, B.I., kand.istor.nauk, mayor; KAZANKOV, A.A., kapitan 1 ranga; KOZIN, K.K., kapitan 1 ranga zapasa; KOLYADA, N.I., kapitan 1 ranga zapasa; KULINICH, D.D., inzh.-kapitan 1 ranga; LOBACH-ZHUCHENKO, M.B., dotsent, inzhener-kapitan 2 ranga zapasa; MASHAROV, A.I., polkovnik zapasa; MYASISHCHEV, V.I., inzhener kontr-admiral; PETROV, L.G., kapitan 1 ranga v otstavke; PROKOF'YEV, V.M., kapitan 1 ranga; POZNAKHIRKO, A.S., kapitan 1 ranga zapasa;  
(Continued on next card)

ANASHKIN, I.A.---(continued) Card 2.

PYASKOVSKIY, G.M., polkovnik; SINITSYN, N.I., polkovnik. Prinimali uchastiye: ANDREYEV, V.V., kapitan 1 ranga; IVANOV, V.P., inzhener-kapitan 2 ranga; CHERNOUS'KO, L.D., inzhener-kapitan 1 ranga; SHIKANOV, Ye.P., inzhener-kapitan 2 ranga. PADEYEV, V.G., vitse-admiral zapasa, glavnyy red.; GERNGROSS, V.M., kapitan 1 ranga zapasa, red.; STAROV, N.N., kapitan 1 ranga v otstavke, red.; SOKOLOVA, G.F., tekhn.red.

[Marine dictionary] Morskoi slovar'. Moskva, Voen.izd-vo M-ya obor. SSSR. Vol.2. 0 - IA. 1959. 440 p. (MIRA 12:12)

(Naval art and science--Dictionaries)  
(Merchant marine--Dictionaries)

✓ Disordering processes in crystalline polymers under action of nuclear radiations. V. A. Kabanov and E. I. Zvereva. *Sovetsk Rabot Radiatsion. Khim. Tekh. Vost. SSSR* 1955, 215-22. ~ Irradiation with a fast electron beam impact on polyethylene specimens leads to increase of the amorphous state of the polymer. ~ Spectra of the x-ray pattern. Calculation of the effect of dose on the change is made. The results are interpreted in terms of free radicals and their combination reaction. ~ M. L.

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ZVEREV, B. I., KARPOV, V. L. and LESHCHENKO, S. S.

"Processes of Phase Transformations in Polymers Under the Action of  
Nuclear Radiation"

Truly Transactions of the First Conference on Radioaction Chemistry, Moscow,  
Izd-vo AN SSSR, 1958. 330pp.  
Conference -25-30 March 1957, Moscow

Untiring efficiency promoter. Kolyma 21 no.3:36 Mr '59.  
(MIRA 12:6)  
(Magadan Province--Prospecting--Equipment and supplies)

SHAKHONYANTS,

Georgiy Mikhaylovich, doktor tekhn. nauk; AMELIN, S.V., prof.,  
retsenzent; KONSTANTINOV, V.N., dots., retsenzent; SMIRNOV, M.P.,  
retsenzent; YAKOVLEV, V.F., retsenzent; BOCHENKOV, M.S., kand.tekhn.  
nauk, retsenzent; BROMBERG, Ye.M., retsenzent; YERSHKOV, O.P., re-  
tsenzent; ZVEREV, B.N., retsenzent; ZLOTARSKIY, A.F., retsenzent;  
IVASHCHENKO, G.I., retsenzent; LINEV, S.A., retsenzent; MARKAR'YAN, M.A.,  
retsenzent; POPOV, V.V., retsenzent; POPOV, S.N., retsenzent; SEREBRENNIKOV, V.V.  
retsenzent; SHAFRANOVSKIY, A.K., retsenzent; NOVITSKIY, G.I., inzh., retsen-  
zent; VIKTOROV, I.I., kand.tekhn.nauk, retsenzent; VYSOTSKIY, A.F.,  
kand.tekhn.nauk, retsenzent; SAATCHYAN, G.G., kand.tekhn.nauk, re-  
tsenzent; YAKOVLEVA, Ye.A., kand.tekhn.nauk, retsenzent; TITOV, V.P.,  
kand.tekhn.nauk, retsenzent; GRUSHEVOY, N.G., inzh., red.; BROMBERG,  
Ye.M., kand.tekhn.nauk, red.; KHITROV, P.A., tekhn. red.

[Railroad tracks] Zheleznodorozhnyi put'. Moskva, Vses.izdatel'sko-  
poligr.ob"edinenie M-va putei soobshchenia, 1961. 615 p.

(MIRA 14:12)

1. Kafedra "Zheleznodorozhnyy put'" Leningradskogo instituta inzhene-  
rov zheleznodorozhnogo transporta (for Amelin, Konstantinov, Smirnov,  
Yakovlev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznod-  
orozhnogo transporta (for Bochenkov, Bromberg, Yershkov, Zverev, Zo-  
lotarskiy, Ivashchenko, Linev, Markar'yan, Popov, V.V., Popov, S.N.,  
Serebrennikov, Shafranovskiy, Novitskiy). 3. Vsesoyuznyy nauchno-issledo-  
vatel'skiy institut transportnogo stroitel'stva (for Viktorov, Vysotskiy,  
Saatchyan, Yakovleva, Titov)

(Railroads--Track)

(Railroad engineering)

ZVEREV, B.N., kandidat tekhnicheskikh nauk.

Investigation of stress in rail joints. Trudy TSMII MPS no.111:  
147-169 '55. (MLBA 9:5)  
(Railroads--Rails)



**ZVEREV, B.N., kandidat tekhnicheskikh nauk**

**General premises for changing over to new type rail fastenings.**

**Trudy TSNII MPS no. 85:4-9 '55. (MLRA 8:11)**  
**(Railroads--Rails--Fastenings)**

**ZVEREV, B.N., kandidat tekhnicheskikh nauk**

**Designs for new type rail fastenings. Trudy TSNII MPS no. 85:10-38  
'55. (MLRA 8:11)  
(Railroads--Rails--Fastenings)**

ZVEREV, B.N., kand. tekhn. nauk; PETROV, N.V., kand. tekhn. nauk;  
GAYDAMAKA, P.S., inzh.; YAKHOV, M.S., kand. tekhn. nauk;  
PETROVA, V.L., red.; DROZDOVA, N.D., tekhn. red.

[New design for rail fastenings] Novye konstruktsii rel'-  
sovykh skreplenii. [By] B.N.Zverev i dr. Moskva, Transhel-  
dorizdat, 1963. 62 p. (MIRA 16:7)

(Railroads--Rails--Fastenings)

Chemical resistance of glass. N. K. Davitov, N. P. Zverev, and R. Ya. Khvilitsh. *Zhur. Priklad. Khim.* (J. Applied Chem.) 22, 235-9 (1949).--Chem. resistance of glass was detd. by leaching out powders and plates. With powders, the ground glass was passed through sieves having 64 and 144 openings per sq. cm., the grains retained on the 144 sieve were washed free from dust, and 2 g. was treated for 1 hr. at the b.p. with 80 ml. of water previously heated to boiling. After treatment, the soln. was titrated with 0.01 N HCl in the presence of methyl red. The surface chem. resistance was detd. by treating 10 X 4 cm. plates in water at 80° for 3 hrs. Chem. resistance was expressed as mg. Na<sub>2</sub>O removed from a sq. in. of surface; detn. was made by titrating the soln. with 0.01 N HCl. In addn. the extent of annealing was detd. by measuring the double refraction in a polarimeter. There seemed to be no relationship between the chem. compn. and chem. resistance of the powder. The surface resistance  $A_s$  can be expressed by  $A_s = K[A_p/(a + P)]$ , where  $A_p$  is the resistance of the powder,  $K$  is a proportionality coeff. which depends on the condition of the surface,  $a$  is a coeff. which includes other factors not taken into account, and  $P$  is the stress in the glass. Treatment of plates for 8, 16, and 24 hrs. in a shower chamber with running water of pH = 8-8.5 at 88° reduced the chem. resistance; the reduction was less for well-annealed surface. Plates were also treated with 5% aluminum nitrate soln. at room temp. for 24 hrs., then washed with 5% HCl, and tested for chem. resistance before and after treatment in the shower chamber. In each case, the aluminum nitrate increased the chem. resistance. Poorly annealed glass has a low chem. resistance because of the

micropores and microcracks on the surface. Treatment with aluminum nitrate results in adsorption of  $Al(OH)_3$  on the surface of pores and cracks; this increases the resistance, and reduces further formation of pores and cracks. Use of aluminum nitrate to increase chem. resistance of glass may find application in industry. B. Z. K.

BOGATYEV, N.I.; BALATOV, P.S.; ZVEREV, B.P.; IVANOV, I.A.; KRUGLIY, S.M.;  
NIMYI, I.M.; FLEYSHEMAN, V.G.; KHAIN, V.A.; SHUR, V.A.; EL'SKIY, V.N.

Condensation of a solution in vacuum evaporator installations.  
Prom.energ. 15 no.4:15-16 Ap '60. (MIRA 13:6)  
(Evaporating appliances)

DOL'DINOV, A.L.; ZVEREV, B.P.; IZRAILEVA, S.B.; LUKHOVITSKIY, V.I.;  
SHABALIN, A.A.

Purification of mercury-containing waste waters. Khim.prom.  
no.9:610-612 Ag '62. (MIRA 15:9)  
(Sewage--Purification)  
(Mercury)

ACCESSION NR: AT3007254

S/2952/63/000/000/0056/0067

AUTHORS: Zvyagin, V. I.; Lobanov, Ye. M.; Zverev, B. P.; Lenchenko, V. M.

TITLE: Employment of the reaction B-super-10 (n, alpha) Li-super-7 for the determination of boron and silicon

SOURCE: Radiatsion. efekty\* v tverd. telakh. Tashkent, Izd-vo AN UzbSSR, 1963, 56-67

TOPIC TAGS: silicon, Si, boron, B, impurity, acceptor element, isotope, B-super-10 (n, alpha) Li-super-7 reaction, pulse, pulse amplitude, diode

ABSTRACT: The paper describes an experimental investigation and sets forth theoretical relationships governing the presence of the extremely active acceptor element B in Si. The reaction  $B^{10}(n, \alpha) Li^7$  for neutrons with an energy of 0.03 ev has a large cross section (4,000 barn). This reaction yields an  $\alpha$  particle with an energy of 1.47 Mev, which has a short path in Si (appx. 5 micron) and a  $Li^7$  nucleus with 0.88 Mev energy. This particle and this nucleus are distinguished by their great total energy (2.35 Mev) and their great ionization density which affords a highly effective registration if the carrier medium exhibits counting properties. In this respect Si is a very convenient material. The block scheme of the measuring

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ACCESSION NR: AT3007254

equipment employed is described. It comprises a Si diode, a power-supply battery, a load resistance, and a preamplifier, all of which are placed in an aluminum shield and are placed at the output of the horizontal channel of the reactor. The pulses arising in a Si n-p junction irradiated with reactor neutrons are rendered visible in an oscillogram. It is shown that the irradiation of Si junctions with reactor neutrons provides a fundamentally sound means for the determination of some impurities in the material, especially H and B. It is also shown how a junction can be employed as a fast-neutron counter, even though only for assessment purposes. The theory of the formation of the pulses in the surface-barrier n-p junction is traced, using an equivalent circuit to represent the surface-hole and -p junction. Expressions are developed for  $I(t)$  by the solution of the diffusion equation for various particular cases, depending on whether the point source of the charge lies within the n region or the region of body charge, or whether the track of the particle lies entirely within the n region. The formulas obtained will be employed for the calculation of the effective volume for prescribed bounds of the changes of the amplitude of the pulses excited by the neutrons in a diode and also for the calculation of the pulse-amplitude spectra. Orig. art. has: 6 figures and 17 numbered equations.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 14Oct63

ENCL: 00

SUB CODE: PH, EL

NO REF SOV: 003

OTHER: 004

Card 2/2



LOBANOV, Ye.M.; ZVYAGIN, V.I.; KIST, A.A.; ZVEREV, B.P.; SVIRIDOVA, A.I.;  
MOSKOVTSOVA, G.A.

Determination of manganese in silicon by the radioactivation  
method. Zhur. anal. khim. 18 no.11:1349-1355 N '63.

(MIRA 17:1)

1. Institut yadernoy fiziki AN UzSSR, Tashkent.

1 0070 66

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00013R002005710001-7  
ACCESSION NR: AT4048913

CONFIDENTIAL

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002005710008-7  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002005710008-7

ACCESSION NR: AT4046914

RIYAZOV, U.M.; ZVEREV, B.P.

Use of collimated beam of nuclear radiation in the local irradiation of experimental animals. Uzb. biol. zhur. 9 no.2:17-20 '65.  
(MIRA 18:5)

1. Tashkentskiy gosudarstvennyy meditsinskiy institut.

YERBY, P. S.  
Inzh., SHIPLOV, P. I., Inzh.

Standard buildings of Moscow automatic telephone stations. Gor. khoz.  
Mosk. 34 no.11:27-28 N '60. (MIRA 13:11)  
(Moscow Telephone, Automatic)

S/759/62/000/004/007/016  
D207/D308

AUTHORS: Zverev, B. V., Sobenin, N. P. and Shchedrin, I. S.

TITLE: Parametric representation of the dispersion curve of a circular diaphragm-type waveguide. I

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 4, 1962, 52-69

TEXT: It is difficult to calculate or measure the dispersion curve of a diaphragm-type waveguide, i.e. the dependence of the phase velocity in the waveguide on the frequency of the power supply. It is more convenient to use parametric curves for determination of the frequency of a particular wave mode in a wide range of waveguide dimensions, wavelengths and phase velocities. The authors first derived the dispersion equation in a form convenient for parametric representation. Then they measured the resonance frequencies of the  $0, \pi/4, \pi/3, \pi/2, 2/3\pi, 3/4\pi, \pi$  modes using an oscillator  $ГЛ-10$  (GS-10) consisting of several rings and diaphragms held in a press  $ПР-1-5$  (PGL-5) in order to avoid any change

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Parametric representation of ...

S/759/62/000/004/007/016  
D207/D308

in dimensions. Parametric curves are given for the wave modes  $\pi/4$ ,  $\pi/3$ ,  $2/3\pi$ ,  $3/4\pi$ , derived from these resonance frequencies. From these curves one can plot parametric nomograms for calculations of the group velocity, derivatives of the phase velocity and of the frequency with respect to the waveguide dimensions, derivatives of the phase velocity with respect to the frequency, etc. The results used to plot the parametric curves may also be employed for the determination of the coefficients occurring in the series expansion of the dispersion curve (see Part II). There are 5 figures and 8 tables.

ZVEREV, B.V.; SOHENIN, N.P.

Use of the resonance method in tuning circular septate wave  
guides of linear accelerators. Prib. i tekhn. eksp. 10 no. 5:  
26-29 S-Q '65. (MIRA 19:1)

1. Moskovskiy inzhenerno-fizicheskiy institut. Submitted  
Sept. 12, 1964.



ZVEREV, B.V.; SOBENIN, N.P.; TRAGOV, A.G.; SHCHEDRIN, I.S.

Determination of attenuation in circular septate wave guides.  
Uskoriteli no.6:21-28 '64. (MIRA 18:2)

ZVEREV, B.V.; SOBENIN, N.P.; SHCHEDRIN, I.S.

Parametrization of the dispersion curve of a round iris wave  
guide. Part 1. Uskoriteli no. 4:52-69 '62. (MIRA 17:5)

ACC NR: AT6017517

SOURCE CODE: UR/2759/65/000/007/0176/0183

110  
B+1

AUTHOR: Zverev, B. V.; Sobenin, N. P.

ORG: none\*

TITLE: Graphical representation of the high frequency characteristics of the hybrid modes  $E_{11}$  and  $H_{11}$  in a cylindrical waveguide loaded with a diaphragm

SOURCE: \*Moscow. Inzhenerno-fizicheskii institut. Uskoriteli, no. 7, 1965, 176-183

TOPIC TAGS: particle accelerator component, relativistic particle, waveguide

ABSTRACT: Experimental curves are given for designing a diaphragm waveguide to be used as a high frequency particle separator. The curves are based on resonant frequency measurements. The high frequency characteristics were determined as functions of  $a/b$  where  $2b$  is the inner diameter of the diaphragm waveguide and  $2a$  is the diameter in the diaphragm opening. Figure 1 shows the group velocity curve as a function of  $a/b$ . The dispersion can be calculated, knowing the group velocity, and is graphed in figure 2. Since the partial derivatives of the frequency relative to the design parameters  $a$  and  $D$  (where  $D$  is the period) are necessary for the final design of high frequency particle separators, the essential curves in figures 3 and 4 are the essential features of this paper. Orig. art. has: 5 figures, 2 tables, 12 formulas.

ACC NR: AT6017517

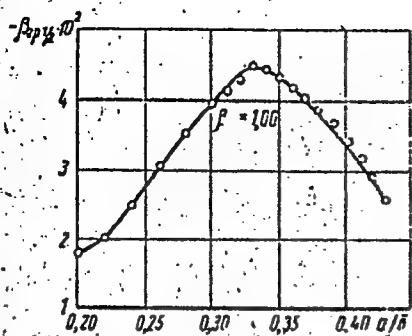


Fig. 1

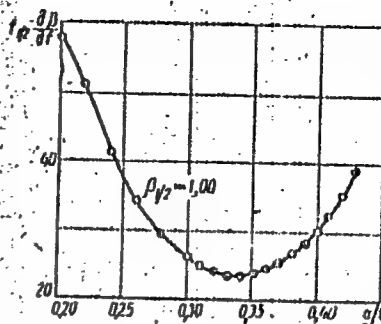


Fig. 2

ACC NR: AT6017517

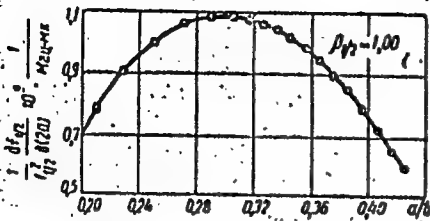


Fig. 3. Graph of the derivative of the frequency of  $\pi/2$ -type oscillations with respect to the diameter of the diaphragm opening.

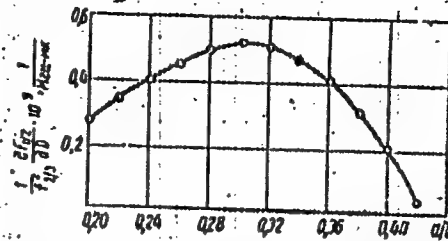


Fig. 4. Graph of the derivative of the frequency of  $\pi/2$ -type oscillations with respect to the period.

SUB CODE: 20,09/

SUBM DATE: none/

ORIG REF: 005

Card 3/3

11b

SOBENIN, N.P.; SHCHERIN, I.S.; GRIZLOV, A.V.; ZVEREV, B.V.

Representation of the principal high-frequency characteristics of a round septate waveguide in graphical form.  
Radiotekh. i elektron. 8 no.11:1945-1949 N '63.  
(MIRA 17:1)

S/759/62/000/004/006/016  
D207/D308

AUTHORS: Gryzlov, A. V., Zverev, B. V. and Sobenin, N. P.

TITLE: Parametric curves for determination of frequency shifts on changing the dimensions of a circular diaphragm-type waveguide

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 4, 1962, 40-51

TEXT: In designing linear electron accelerators it is often necessary to know the variation of the frequency of a particular mode with the dimensions of a waveguide. To ease the solution of this problem, formulas are derived for the calculation of the derivatives of the frequency with respect to waveguide dimensions, and nomograms and tables are given for calculations of these derivatives for  $\pi/2$  modes for practically any waveguide dimensions, any frequency or phase velocity. A simple method is given for calculating these derivatives for other oscillation modes. There are 4 figures and 6 tables.

Card 1/1

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EWI(1)/EWI(M)

ISP(C)

SOURCE CODE: UR/0120/65/000/005/0026/0029

ACC NR: AP5027002

AUTHOR: Zverev, B. V.; Sobenin, N. P.ORG: Moscow Engineering-Physics Institute (Moskovskiy Inzhenerno-fizicheskiy Institut)TITLE: Adjustment of circular iris waveguides of linear accelerators by the resonance method

SOURCE: Pribery i tekhnika eksperimenta, no. 5, 1965, 26-29

TOPIC TAGS: waveguide iris, circular waveguide, linear accelerator

ABSTRACT: The accuracy of measuring the frequency in circular iris waveguide resonators is estimated in this article. A method is described which permits adjusting such waveguides with smoothly changing dimensions even with tolerances of  $\pm 50\mu$ . The bandwidth characteristic of the waveguide after adjustment is satisfactory from the point of view of stable operation of the HF oscillator, and the law of change of the phase of velocity is maintained with an error of less than 1%. The examined method of adjusting the units of the iris waveguide has obvious advantages over other methods in that the components of the waveguide are adjusted directly, which precludes errors associated with tolerances for the size of the waveguide. The effect of the holes in the rings is taken into account and the errors associated with the imperfection of the silencing devices and the effect of the coupling loops are eliminated. The possibilities of

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UDC: 621.372.8



ACC NR: AP5027002

the method are not limited only to circular iris waveguides made up of rings and iris diaphragms. This method can be developed for adjusting iris waveguides manufactured in a different manner and for adjusting other decelerating systems with constant or slowly changing dimensions of the components. Orig. art. has: 5 figures and 1 table.

SUB CODE: 09/ SUBM DATE: 12Sep64/ ORIG REF: 006/ OTH REF: 001

Card 2/2

*Ldh*

ACC NR: AT6017508

SOURCE CODE: UR/2759/65/000/007/0054/0065

AUTHOR: Zverev, B. V.; Sobenin, N. P.

ORG: none

41  
B+1

TITLE: Graphical representation of basic high frequency characteristics of a cylindrical waveguide with diaphragms and with  $2\pi/3$  type of oscillations

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 54-65

TOPIC TAGS: electron accelerator, circular waveguide, particle accelerator component

ABSTRACT: Ten families of curves and data are presented which were obtained from resonance measurements on a cylindrical waveguide with diaphragms. All curves and data are related to the basic high frequency oscillations of the  $2\pi/3$  type. The curves are sufficiently accurate over a large interval of variation in the waveguide design parameters. Orig. art. has: 2 tables, 7 formulas, 10 figures.

SUB CODE: 20109/

SUBM DATE: none/

ORIG REF: 005/

OTH REF: 004

Card 1/1 hs

ACC NR: AT6017516

SOURCE CODE: UR/2759/65/000/007/0167/0175

**AUTHOR:** Zverev, B. V.; Sobenin, N. P.

ORG: none

TITLE: Experimental investigation of the waveguide properties for a particle separator with a crossed field

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 167-175

**TOPIC TAGS:** particle accelerator component, relativistic particle, waveguide

**ABSTRACT:** The authors describe the experimental methods and results of a study of waveguides as high-frequency particle separators.<sup>11</sup> They found that in the high-pass band the mode  $E_{11}$  and  $H_{11}$  provides for a perpendicular electric field in a cylindrical waveguide with diaphragms. In this mode, with perpendicular electric field, the dispersion is negative. The errors of measurement are less than 1 Mc (around  $1/2\%$ ). The usual method of resonance measurement with a perturbing probe was employed. A graph of the change in frequency along the waveguide axis shows that at 2818.5 Mc the  $\pi$ -type oscillations dominate whereas the 0-type dominate at 3048 Mc. This proves the presence of negative dispersion. Resonant frequency variations as a function of the displacement of the dielectric needle shaped probe along the  $z$ -axis, at  $r=15$  mm are graphed. The authors conclude that the investigated wave is polarized and has a radial compo-

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ACC NR: AT6017516

ment of the electric field; at  $r=0$  and  $r=b$  (radius of the guide)  $E_z$  and  $E_\theta$  vanish.  $E_r$  is maximum at  $r=0$  and  $H_r$  is maximum near the opening of the diaphragm and is perpendicular on the plane through the  $z$ -axis and the coupling loop. Such a waveguide can then be used as an ultrahigh frequency separator for relativistic particles. Orig. art. has: 6 figures, 2 tables.

SUB CODE: 20,09/

SUBM DATE: none/

ORIG REF: 002/

OTH REF: 003

GERSHGORN, M.A.; SVIRIDENKO, F.F.; KAZARNOVSKIY, D.S.; KHAUTSOVA, I.P.;  
POPOVA, A.N.; FRADINA, M.G.; Prinizali uchastiye: LEKASHOV, G.G.;  
RUDOL'SKIY, N.L.; SLEPKANEV, N.P.; PLISKANOVSKIY, S.T.; GORBANEV,  
Ya.S.; BUL'SKIY, M.T. [deceased]; ARKHANGEL'SKIY, Yu.N.; SHAROV,  
B.A.; VISTOROVSKIY, N.T.; RAKHANSKIY, B.I.; SAPOZHKOV, V.Ye.;  
RYABININ, N.G.; KARAKULINA, R.R.; FADEYEVA, A.M.; ZVEREV, D.A.

Improving the production of high-strength rails by alloying  
them with granulated ferrochromium in the ladle. Stal' 25  
no.5:408-411 My '65.

(MIRA 18:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod  
"Azovstal'".

Forage lupine. Nauka i pered.op.v sel'khoz. 7 no.7:32-33 JT '57.  
(Lupine) (MIRA 10:8)

**5888. THE DETECTION OF PERSISTENT FORMS OF DYSENTERY; INDICES  
OF RECOVERY (Russian text) - Zverev E.I. - SOV. MED. 1958, 22/12  
(86-89)**

Of the total of over 1,500 dysentery patients observed, 319 had the chronic form. In addition, 469 acute dysentery patients were observed, all of whom recovered after 2 to 4 weeks, whereas chronic dysentery lasted from 6-12 weeks. Diarrhoea was present in 30-35% of chronic cases, but more characteristic of these cases was constipation, particularly when alternating with diarrhoea, and frequently associated with pus, blood and mucus in the stools. Subfebrile temperatures were recorded in about 50% of all chronic cases.

Anigstein - Galveston, Tex. (L. 6

SUPRON, L.F.; ZVEREV, F.P.; MUKHIN, A.P., prof., red.; POL'SKIY, S.,  
red.; STEPANOVA, N., tekhn.red.

[Medical care of the population subjected to methods of mass  
destruction] Meditsinskoe obespechenie naselenia v usloviakh  
primeneniia sredstv massovogo porazheniia. Pod red. A.P.Mukhina.  
Minak, Gos.izd-vo BSSR. Red.nauchno-tekhn.lit-ry, 1959. 407 p.

(MIRA 12:9)

(ATOMIC MEDICINE)



14(5)

80V/93-58-12-10/16

AUTHOR: Amelin, I.D. and Zverev, F.P.

TITLE: Hydrodynamic Calculations in Analyses of Development of Maykop Oil Deposits of the Khadyzhen Group (K gidrodinamicheskim raschetam pri analize razrabotki maykopskikh zalezhey nefti Khadyzhenskoy gruppy)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 12, pp 46-52 (USSR)

ABSTRACT: The Klyuchevoy Oilfield was discovered in 1951 near the Goryachiy Klyuch Resort in the Krasnodar Kray. The Klyuchevoy belongs to the group of oilfields, located in the western part of the southern border of the Azov-Kuban' Depression, as well as to the Maykop Middle Section (horizons I and II). The outcrop lines of these horizons form the gulflike oil deposits which are extended in the Khadyzhen group of gulfs cropping out in the area of Neftegorsk. To the north the oil deposits are in contact with a strip of water-saturated sand which extends from Neftegorsk to Novo-Dimitriyevskaya Station. This water pressure system is, evidently fed by the Pshekha River Basin. In 1953 I.D. Amelin [Ref 1] suggested a system of hydrodynamic calculations for the determination of the pressure change in the oil deposits at given rates of fluid recovery from the formation. This method which has been successfully applied to the Klyuchevoy Oilfield and to analyses of the oilfield's development proved

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# Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

to be suitable for all oilfields of the Klyuchevoy type. Calculations by this method made it possible to determine also the effect of natural encroachment of edge water on the oilfield's development, the optimum petroleum recovery from the formation, and the relationship between the current recovery of petroleum and the water injection for pressure maintenance purposes. The author presents a scheme of the water pressure system of the gulflike deposits of Kuban' (Fig.1) and of individual deposits (Fig.2) similar to those of the Klyuchevoy Oilfield. He also cites an example of how his method was applied to the Klyuchevoy Oilfield. He also cites an example of how his method was applied to the Klyuchevoy Oilfield and presents the data obtained (Fig. 3 and Tables 1-2). The main formula employed in the calculations is

$$P_g(t) = P_{km} - P_g(t) = \frac{\mu v}{L_k k_{kh}} \sqrt{\frac{4\chi}{\pi L}} \left( Q_{zh} \sqrt{t} + \sum_{i=1}^n \Delta Q_{zh}^i \times \sqrt{t-t_i} \right),$$

where  $P_{km}$  is the initial formation pressure,  $\mu_v$  - the viscosity of the formation's water,  $L_k$  - the width of the formation's water pressure system,  $k$  - the permeability of the formation,  $h$  - the effective capacity of the formation in the water pressure area,  $\chi$  - the piezo conductivity coefficient of the water

# Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

pressure system,  $Q_{zh}^n$  - the initial yield of the formation,  $Q_{zh}^1$  - the intermittent change in the yield of the formation since the time  $t_1$  of the formation's development; in case the formation's yield increases the  $Q_{zh}^1$  has a "plus" sign and in case it decreases the  $Q_{zh}^1$  has a "minus" sign;  $t$  - is the time since the initial development of the formation for which the  $\Delta P_g(t)$  is being determined;  $i = 1, 2, 3$ ;  $n$  - is the number of time units (within the ranges of  $t$ ) characterizing the stable yield of the formation. This following formula was employed in order to arrive at a more accurate prognosis of the pressure change in the formation at any given rates of fluid withdrawn from the formation:

$$P_{zal}(t) = P_{kn} - z_{sr} \left( \frac{\mu v}{L_k kh} \sqrt{\lambda} \sqrt{\frac{4}{\pi}} \times (Q_{zh}^n \sqrt{t} + \sum_{i=1}^n \Delta Q_{zh}^i \sqrt{t-t_1}) \right)$$

where  $P_{zal}$  is the formation pressure and  $z_{sr}$  - the mean error. The authors conclude that this method of calculation made it possible with the aid of hydraulic fracturing to increase the water injection into the wells and consequently increase the petroleum recovery from horizon I by 100 tons per day

Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

from horizon II by 150 tons per day without impairing the formation's efficiency. They also conclude that that this method of calculation makes it possible to determine the water loss of injection wells and consequently eliminate the causes responsible for the water loss. There are 3 figures, 2 tables, and 4 Soviet references.

Card 4/4

YUN'KOV, M.G., inzh.; ONISHCHENKO, G.B., inzh.; ZVEREV, G.A., inzh.

Testing an asynchronous rectifier stage under industrial conditions. Vest. electroprom. 32 no.10:13-18 0 '61. (MIRA 14:9)  
(Electric current rectifiers)

S/196/62/000/006/013/018  
E194/E154

AUTHORS: Yun'kov, M.G., Onishchenko, G.B., and Zverev, G.A.  
TITLE: Industrial studies of rectifier-invertor fed  
induction motor drive

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,  
no.6, 1962, 3-4, abstract 6 Kll. (Vestn.  
elektroprom-sti, no.10, 1961, 13-18).

TEXT: Results are given of tests in service on an a.c.  
induction motor drive controlled by rectifier-invertor chain  
used to drive centrifugal compressors of the gas pipeline between  
Stavropol' and Moscow. In this system the speed of the 4500 kW  
wound-rotor induction motor with a rated speed of 1490 r.p.m.  
can be changed smoothly in the range 100-70% of rated speed, thus  
allowing the gas compressor rating to be varied between 100% and  
35%. The rectifier-invertor circuit uses a slip frequency  
converter with an explicit d.c. circuit. The uncontrolled  
rectifier valves convert the rotor slip frequency current to d.c.  
and the invertor converts the d.c. into power frequency (50 c/s)  
a.c. The invertor valves are grid controlled so that the  
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Industrial studies of rectifier- ...

S/196/62/000/006/013/018  
E194/E154

inverter e.m.f. can be controlled from the rectified current side, thus the rotor current, torque and motor speeds. The rotor and inverter valves are mercury-arc rectifiers type PM48-1000 x 6 (RMNV-1000 x 6). With the rectifier-converter circuit the utilization of the motor is not impaired so that its rating can be chosen by the usual methods. The rectifier-converter circuit has high efficiency, namely, 0.92-0.88 within the given speed control range. A disadvantage of the rectifier-converter circuit is the low power factor which is 0.67 at maximum speed and 0.43 at 70% rated speed. Experimental curves are given for power factor of the valves and the motor and also curves of the changes in reactive power consumption of individual parts of the system as function of slip. Tests showed that the rectifier-inverter circuit operates well and has good control characteristics, the motor and valves operate reliably, current waveform distortion in the supply lines to the rectifier is slight, no influence of higher harmonics on the operation of other equipment was observed. Further improvement in the asynchronous rectifier-inverter circuit presupposes the use of rotor valves controlled by slip frequency

Card 2/3

Industrial studies of rectifier- ... S/196/62/000/006/013/018  
E194/E154

inverter e.m.f. can be controlled from the rectified current side, thus the rotor current, torque and motor speeds. The rotor and inverter valves are mercury-arc rectifiers type PMHB-1000 x 6 (RMNV-1000 x 6). With the rectifier-converter circuit the utilization of the motor is not impaired so that its rating can be chosen by the usual methods. The rectifier-converter circuit has high efficiency, namely, 0.92-0.88 within the given speed control range. A disadvantage of the rectifier-converter circuit is the low power factor which is 0.67 at maximum speed and 0.43 at 70% rated speed. Experimental curves are given for power factor of the valves and the motor and also curves of the changes in reactive power consumption of individual parts of the system as function of slip. Tests showed that the rectifier-inverter circuit operates well and has good control characteristics, the motor and valves operate reliably, current waveform distortion in the supply lines to the rectifier is slight, no influence of higher harmonics on the operation of other equipment was observed. Further improvement in the asynchronous rectifier-inverter circuit presupposes the use of rotor valves controlled by slip frequency

Card 2/3

Industrial studies of rectifier- ... S/196/62/000/006/013/018  
E194/E154

and improvement in the power factor.  
4 literature references.

[Abstractor's note: Complete translation.]

Card 3/3



21(0)

AUTHORS:

Koryakin, Yu., Isayev, B., Shamanov, M., Zverev, G.

SOV/89-6-6-26/27

TITLE:

Short Encyclopedia "Atomnaya energiya" (Kratkaya entsiklopediya "Atomnaya energiya"). Review (retsenziya)

PERIODICAL:

Atomnaya energiya, 1959, Vol 6, Nr 6, pp 693-695 (USSR)

ABSTRACT:

The authors discuss the above mentioned book which was published in 1959 in Moscow by the Gosudarstvennoye nauchnoye izdatel'stvo "Bol'shaya Sovetskaya Entsiklopediya" (Scientific State Publishing House "Great Soviet Encyclopedia"). There is 1 Soviet reference.

Card 1/1

ZVEREV, G.I.

Surgical treatment of stomach cancer. Vest.khir. no.6:41-43  
162. (MIRA 15:11)

1. Iz Vologodskogo oblastnogo onkologicheskogo dispansera (gl.  
vrach -- G.I. Zverev).  
(STOMACH--CANCER)

ZVEREV, G. I.

Skin cancer in Vologda Province; according to data of the provin-  
cial oncological dispensary. Vop. onk. 8 no.1:98-101 '62.  
(MIRA 15:2)

1. Iz Vologodskogo oblastnogo onkodispensera (glav. vrach -  
N. A. Mataruyev).

(VOLOGDA PROVINCE—SKIN—CANCER)

ZVEREV, G.I.

Postoperative mortality in stomach cancer. Vop.onk. 9 no.1:  
102-105 '63. (MIRA 16:5)

1. Iz Vologorodskogo oblastnogo onkodispensera (glavnyy vrach  
N.A.Mataruyev).

(STOMACH—CANCER) (STOMACH—SURGERY)  
(CANCER—MORTALITY)

PHASE I BOOK EXPLOITATION SOV/3694

Bogoyavlenskiy, Konstantin Nikolayevich, and Grigoriy Ivanovich  
Zverev

Mekhanicheskoye oborudovaniye dlya obrabotki davleniyem tsvetnykh metal-  
lov i splavov (Mechanical Equipment for Pressworking Nonferrous  
Metals and Alloys) Moscow, Metallurgizdat, 1959. 359 p. Errata  
slip inserted. 4,200 copies printed.

Ed.: G.A. Smolyanov; Ed. of Publishing House: M.R. Lanovskaya;  
Tech. Ed.: V.V. Mikhaylova.

PURPOSE: This book is intended as a textbook in tekhnikums for a course  
on "Mechanical Equipment in Metallurgical Plants". It may also be  
of value to technical personnel in metallurgical establishments.

COVERAGE: This book is a continuation of the book by V.V. Zholobov,  
K.N. Bogoyavlenskiy, M.Ye. Zubtsov, A.D. Landikhov, E.M. Lekarenko,  
N.N. Postnikov: Obrabotka tsvetnykh metallov i splavov davleniyem  
(Pressworking of Nonferrous Metals and Alloys). Metallurgizdat, 1955.  
The theoretical assumptions of pressworking and the fundamentals of  
rolling, drawing, pressing, and forging are discussed. Methods

Card 1/8

## Mechanical Equipment (Cont.)

SOV/3694

of determining the pressure of metal in plastic pressworking are presented. Equipment for pressworking of nonferrous metals and alloys is described and examples of rolling mills, die presses, and foundry equipment are given. Cold rolling methods for tubular stock are described in some detail. Information on auxiliary equipment and off-line mechanisms is included. The text contains numerous drawings, photographs, and diagrams. Authors of books given in bibliography are mentioned in the foreword. There are 47 references, all Soviet.

### Introduction

#### Ch. I. General Arrangement of Rolling Mills

1. Classification of rolling mills
2. Arrangement of rolls in the housing
3. Layout of stands of various rolling mills
4. Diagram of the layout of mills for rolling copper and copper alloy sheets
5. Shops for rolling aluminum and aluminum alloy sheets
6. Shops for rolling wire and merchant bars

3

5

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6

8

11

15

19

Card 2/8

ZVEREV, G.I.

PHASE I BOOK EXPLOITATION

SOV/3356

25(1)

Zholobov, Viktor Vladimirovich, and Grigoriy Ivanovich Zverev

Pressovaniye metallov (Extrusion of Metals) Moscow, Metallurgizdat,  
1959. 542 p. 4,250 copies printed.

Reviewers: S.I. Gubkin, Member of the BSSR Academy of Sciences,  
Professor, Doctor of Chemical Sciences (Deceased); L.V. Prozorov,  
Doctor of Technical Sciences; M.V. Rozanov, Engineer; and  
Ye. B. Zadov, Engineer; Ed. (Title page): I.L. Perlin, Professor,  
Doctor of Technical Sciences; Ed. (Inside book): V.S. Rzhiznikov,  
Ed. of Publishing House: M.S. Arkhangel'skaya; Tech. Ed.:  
Ye.B. Vaynshteyn.

PURPOSE: This book is intended for engineers, technicians, and  
students working or specializing in the manufacture of tubes,  
rods and shapes chiefly from nonferrous metals.

COVERAGE: This book contains material on the theory and practice  
of metal extrusion including a description of extrusion processes  
for a variety of metals and alloys. The construction, mounting

Card 1/19

ZHOLOBOV, V.V.; ZVEREV, G.I.; YAM, V.M., inzh., retsenzont

[Dies for the hot pressure working of metals] Instru-  
ment dlia goriachego pressovaniia metallov. Moskva,  
Mashinostroenie, 1965. 161 p. (MIRA 18:2)



ZHOLOBOV, V.V.; ZVEREV, G.I.; YAM, V.M., inzh., retsenzent

[Dies for the hot pressure working of metals] Instru-  
ment dlia goriachego pressovaniia metallov. Moskva,  
Mashinostroenie, 1965. 161 p. (MIRA 18:2)

9.3150,24.2120

77842  
SOV/57-30-3-8/15

AUTHORS: Demirkhanov, R. A., Gevorkov, A. K., Popov, A. F.,  
Zverev, G. I.

TITLE: High-Frequency Oscillations in a Restricted Plasma (Work  
Completed in 1958)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 3,  
pp 306-314 (USSR)

ABSTRACT: Oscillations observed in discharges are identified  
usually as plasma oscillations. However, Looney and  
Brown (see reference) observed some oscillations which  
occur only in presence of double layers on plasma  
boundaries. This is not in agreement with the theory  
of plasma oscillations. The authors here investigate  
the nature and excitation mechanism in plasma bounded  
by double layers and show that one obtains high-frequency  
oscillations due to oscillatory motion of secondary  
electrons in the potential well of the plasma. They  
used an apparatus similar to that of Looney and Brown  
(see Fig. 1).

Card 1 /7

# High-Frequency Oscillations in a Restricted Plasma

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SOV/57-30-3-8/15

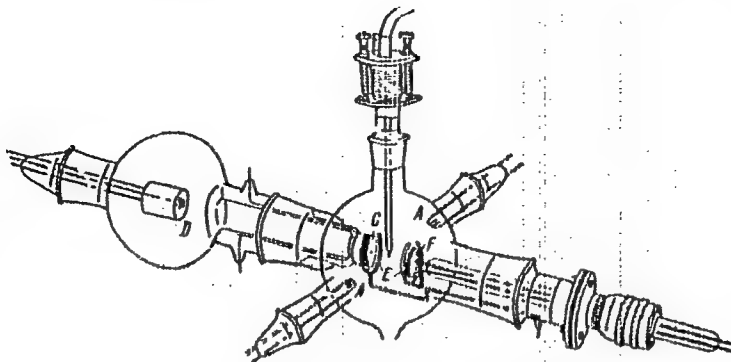


Fig. 1. Construction of discharge tube.

Plasma was produced between the oxide-coated cathodes A and anodes E. Electron beam, up to 3 kv of energy entered the region through C, and after crossing a distance L through the plasma, it would fall on F.

High-Frequency Oscillations in a  
Restricted Plasma

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SOV/57-30-3-8/15

connected electrically to C. The potential well for electrons was caused by ion layers between annular anodes E and electrodes F and C. Variable voltage 0-400 v enabled large variations of ion layer thickness. Distance L between F and C could be changed 10-30 mm.

Working pressure was  $10^{-2}$ - $10^{-3}$  mm Hg, while the gases used were Ar, H<sub>2</sub>, and N<sub>2</sub>. A movable coaxial probe was collecting plasma parameters and oscillation frequencies, with the sensitivity of the registering device at  $10^{-11}$  v. The authors first derive an expression for the frequency inside the potential well  $f_0$  of electrons caused by secondary emission of electrons by primary beam on F:

$$f_0 = \frac{1}{4 \frac{d}{v} + \frac{2(L-2d)}{\sqrt{\frac{2eV_1}{m}}}}$$

High-Frequency Oscillations in a  
Restricted Plasma

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where  $d$  is thickness of ionic layer;  $\bar{v}$  is average velocity of electrons in layer;  $V_1$  is potential of plasma with respect to source of electrons. They found that these secondary electrons oscillating inside the potential well are responsible for the excitation of oscillations measured by the probe and listed in Table 1. Note that observed frequencies satisfy relation

$$f_n = n f_0 \quad (n=1, 2, 3 \dots).$$

Similar results were obtained for fixed potentials and variable  $L$ . A continuous flow of electrons oscillating inside the well could not produce an amplification of alternating fields unless a mechanism exists ensuring an orderly motion and enabling particles to give their energy to the alternating field. The authors show that such a mechanism of amplitude selection can exist provided there is an alternating field on the boundary of the plasma in addition to the constant field.

High-Frequency Oscillations in a  
 Restricted Plasma

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Table 1.  $V_{\text{beam}} = 300 \text{ v}$ ;  $P = 7 \cdot 10^{-3} \text{ mm Hg}$ ;  $L = 20 \text{ mm}$ ;  
 $f_0$  is frequency computed from the potential distri-  
 bution;  $f_n = n f_0$  ( $n = 1, 2, 3 \dots$ ) are experimentally  
 observed frequency groups.

$U_{\text{bias}}$ V	$U_{\text{plasma}}$ V	$d$ mm	$f_0 \cdot 10^4$ cycles	$f_1 \cdot 10^4$ cycles	$f_2 \cdot 10^4$ cycles	$f_3 \cdot 10^4$ cycles	$f_4 \cdot 10^4$ cycles	$f_5 \cdot 10^4$ cycles
120	16	2.0	125	—	—	490	595—660	710—790
140	14	2.2	135	—	—	530—560	630—720	760—860
160	12	2.4	145	—	—	540—600	660—765	820—900
180	11	2.8	152	—	—	570—630	630—795	870—920
200	11	3.0	158	—	460—485	580—660	710—835	—
220	11	3.2	164	—	470—510	620—680	760—860	—
240	10	3.5	169	310—345	460—535	640—710	795—870	—
260	10	3.7	173	330—360	490—540	660—740	820—920	—

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This mechanism is applicable for frequencies lower than the plasma frequency since because of fast damping of such alternating fields inside the plasma they remain concentrated on the surface of the plasma. The authors also show that the mean free path  $l$  of the electrons is of fundamental importance and must be at least equal to  $2L$ . When  $l$  was adjusted to approximately 6 cm, oscillation vanished at  $L = 3$  cm. Also, the authors investigated influences of plasma densities and widths of the excited frequency groups. They found that phase focusing plays a substantial role at high amplitudes of oscillations. They observed sometimes in the plasma of the primary discharge, oscillations caused by electron oscillations in the potential well of the cathode potential drops. All oscillations were accompanied by electromagnetic radiations discernible by antennas placed outside the discharge tube. The authors believe that the oscillations observed by Looney and Brown and, most probably, by other authors are connected to the

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High-Frequency Oscillations in a  
Restricted Plasma

11642  
307/57-30-3-8/15

mechanism of amplitude selection. Ya. B. Faynberg  
evaluated many results of the present paper. There  
are 9 figures; 2 tables; and 11 references, 1 Soviet,  
1 Dutch, 1 Irish, 1 U.K., 7 U.S. The 5 most recent  
U.K. and U.S. references are: D. Gabor, IRE Trans.,  
AP-4, Nr 3, 526 (1956); T. K. Allen, R. A. Bayley,  
K. G. Emeleus, Brit. J. Appl. Phys., 6, 320 (1955);  
D. K. Looney, S. C. Brown, Phys. Rev., 93, 965 (1954);  
D. Bohm, E. P. Gross, Phys. Rev., 75, 1851, 1864 (1949);  
79, 992 (1950).

SUBMITTED: November 2, 1959

Card 7/7



*Powder Metallurgy*

...the formation by molten cobalt of titanium carbide compacts made of different grades of titanium carbide showed that best permeation and wetting was obtained with titanium carbide obtained by heating TiO<sub>2</sub> with lump-look in a vacuum for 2 hrs. at 1150 °C. Titanium carbide prepared in this way contained practically the theoretical amount of combined carbon (19.1%) and had a correspondingly low residual oxygen content (about 1%). Formation and wetting of commercial grades of titanium carbide, containing less carbon and more residual oxygen, was not complete, and one sample which had given rise to the "porous core" defect when sintered in tungsten carbide-cobalt mixtures remained completely unsintered. The relation between the appearance of the "porous core" defect and the carbon

carbon and residual oxygen content of the titanium carbide was confirmed by experiments in which tungsten carbide-titanium carbide-cobalt compacts were sintered. The formation of this defect is ascribed to the evolution of carbon monoxide on recrystallization of "low-carbon," "high-oxygen" titanium carbides at the sintering temperature when in contact with the molten binder.

-A. B.

1942

authors investigated the solubilities of  $K_2TaF_7$  and  $K_2C_2O_7 \cdot H_2O$  to improve the technology of seps. of Ta and Nb, particularly from the waste solns. of Ta manufacturing which contain Nb, and investigated the system  $K_2TaF_7$ - $K_2C_2O_7 \cdot H_2O$ -HF. In the soly. expts. 1% aq. solns. of HF was used; this concn. sufficed to prevent hydration and formation of complex insol. salts. The Ta salt used in the expts. contained 0.003% of impurities (Fe, Si, Zn, Sn), and the Nb salt about 0.13%. The soly. tests were made at 20 to 75° in 1% HF (aq.) individually for each salt. The ratio of solubilities of  $K_2TaF_7$  to  $K_2C_2O_7 \cdot H_2O$  was found to be 1:12 at 20° and 1:11 at 75°. This agrees with previously published results of Russ and Schiller (C.A.B. 6, 839). It was also found that  $K_2TaF_7$  is insol. in the presence of  $K_2C_2O_7 \cdot H_2O$ . Soly. isotherms of the peritectic system  $K_2C_2O_7 \cdot H_2O$ - $K_2TaF_7$ -HF (1%, aq.) were investigated at 31 and 60°. These were obtained by adding the Nb salt to satd. solns. of the Ta salt in aq. HF. It was shown that  $K_2TaF_7$  is pptd. as the Nb salt is added. The min. concn. of the Ta salt (0.05%) is attained when 1.5 to 1.7% and 3.5 to 3.7% of Nb salt is added at 21 and 60°, resp. The most rational concn. method of seps. of Ta and Nb consists in treating solns. of  $Ta_2O_5$  and  $Cb_2O_5$  in HF, with KF or KCl-HF. The vols. of solns. should be adjusted so that upon addn. of HF the concn. of  $K_2C_2O_7 \cdot H_2O$  is near the satn. point. This treatment ppt. practically all of the Ta; the  $K_2C_2O_7 \cdot H_2O$  nearly free from Ta, remains in soln. The Nb salt is then crystd. out by heating. 3 references. B. N. Doolittle

B. N. Deailed

CA

Behavior of titanium carbide in hard alloys. G. A. Meerson, G. L. Zverev and B. R. Osinovskaya. *J. Applied Chem.* (U. S. S. R.) 13, 66-75 (in German, 75) (1940).—Ti carbide contg. 10.2% C and a small amt. of residual O was obtained at 1420° and 0.14 mm. pressure. It was more granular than ordinary commercial prepreg because of the low temp. of formation. The best carbide for use in sintered alloys is low in O. The better the quality of TiC, the higher is the degree of penetration of fused Co. A. A. Podgorny.

ASB-36A METALLURGICAL LITERATURE CLASSIFICATION

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208

*Chem* The ternary cerium-calcium-chlorine system. *Chem. Zvezdy*. Volodys Akad. Nauk S.S.S.R. 104, 242 (1963).  
The quaternary Ce-CeCl<sub>2</sub>-CaCl<sub>2</sub>-Ca diagram was constructed from free-surface-energy data (Raynor, C.A. 43, 690 (6)); it consisted of 2 ternary systems: Ce-CeCl<sub>2</sub>-CaCl<sub>2</sub> and Ce-CaCl<sub>2</sub>-Ca. Three immiscible double-layer regions were found, and 2 ternary eutectics. The crystal line of the binary Ca-Cu eutectic is located below the formation region of 2 liquid phases. A provisional Ca-Ce-Cl m.p. diagram was constructed that, in spite of its provisional nature, is expected to give valuable information on the complex m.p. and crystal processes of CeCl<sub>3</sub> reduction.  
W. M. Steinberg

S/588/61/000/004/009/011  
D234/D303

9.7300

AUTHOR: Zverev, A.Ye.

TITLE: A device transforming linear quantities into the "DP" digital code

SOURCE: Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, no. 4, Moscow 1961, 324 - 338

TEXT: The author describes a new transmitter of small linear displacements with a high power of resolution which allows the conversion of analogue quantities into discrete ones within the range of displacements of the executive organ of a machine tool (several meters). It is stated that the transmitter was developed at the Department of Mathematical Machines of MVTU. The transmitter consists of two optical rules, a micro-objective situated between these and a photomultiplier. The object rule is displaceable; the second rule and the objective are fixed. Operation of the transmitter is described and design formulas are given. Technology of manufacture of the rules is also described. There is a dependence between the accuracy

✓B

Card 1/2

A device transforming linear ...

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of division of the rules and the accuracy of the transmitter; the author gives graphs of distribution of errors in divisions for several rules manufactured at the Zavod koordinatno-rastochnykh stan-kov (Factory of Coordinate Machining Tools) in Moscow. There are 9 figures and 16 references: 9 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: P.I. Farmer, "Fairey-Ferranti", Aircraft Production, no. 5, v. 20, 1958; G.G. Bower, Analog to Digital Computers, Control Engineering, no. 11, April 1957; H.B. Harrison, B.A. Horlock and F. D. Hunt, The inductosyn and its application to a programmed coordinate table, Electronic Engng., June 1957; Hayes Diomaster Machine with Ferranti Electronic Positioning System, Machiner (L), v. 89, no. 2277, 1956. ✓B

SOURCE CODE: UR/0113/66/000/024/0087/0088

INVENTORS: Zverev, A. Ye.; Mironenko, A. V.

ORG: none

TITLE: Converter of angular displacements into digital code. Class 42, No. 189624

SOURCE: Izobreteniya, promyshlennyye obrastys, tovarnyye znaki, no. 24, 1966, 87-88

TOPIC TAGS: analog digital encoder, angle measurement instrument

ABSTRACT: This Author Certificate presents a converter of angular displacements into digital code. It contains a measuring and indicating screen or diffraction grating, a photocell, and an illuminator. To increase the conversion accuracy, to decrease periodic and cumulative errors in the spacing of the sequence of lines on the measuring disk and in its uniform warpage, the converter contains one or several (e.g., three spaced at 120°) electromagnetic mechanisms with tangential displacement and torsional oscillation windings connected respectively to dc and ac sources (see Fig. 1). The armatures of the electromagnetic mechanisms are rigidly coupled to an indicator plate or indicator disk with another lined track.

ACC NR: 127002969

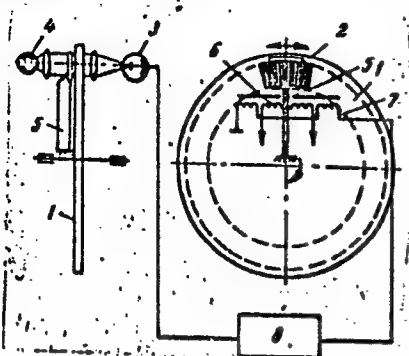


Fig. 1. 1 - measuring grating;  
2 - indicator grating; 3 - photo-  
cell; 4 - illuminator; 5 - electro-  
magnetic mechanism armature;  
6 - tangential displacement  
winding; 7 - torsional oscillation  
winding; 8 - shaper

Orig. art. has: 1 diagram.

SUB CODE: 09/

SUBM DATE: 05May65



ZVEREV, A.Ye., aspirant

Structural characteristics of the converter of linear displacements to the digital code. Izv.vys.ucheb.zav.; mashinostr. no.12:162-168 '61. (MIRA 15:2)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.

(Electronic digital computers)

Analyzing the precision of the DP converter of minor linear  
displacements of the numerical code. Izv.vys.ucheb.zav.; prib.  
4 no.5:84-93 '61. (MIRA 14:10)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.  
Rekomendovana kafedroy matematicheskikh mashin.  
(Electronic digital computers)

32554  
S/145/61/000/012/007/007  
D221/D302

9,7300

AUTHOR: Zverev, A. Ye., Aspirant

TITLE: Some design features of a converter of linear displacements into numerical code

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 12, 1961, 162-168

TEXT: The analogue-to-digital converter designed by the Department of Mathematical Machines at MVTU im. N. E. Bauman is described. The experimental device can be divided into the following units: Measuring device (converter); pulse separator; reversible counter and decoder. The measuring device, connected in the general feedback, is a photoelectric system in the form of two optical rules. The encoder ДП (DP) contains a light source, optical system of the counting ray, projector with correcting elements, and the recorder. The displacement slide is actuated by a d.c. motor and reducer. Its reversal is ensured by contactors (Ш-1564 (Sh-1564), ГОСТ (GOST) 3899-58). The screen rules can be adjusted in three planes.

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D221/D302

Some design features ...

The two objectives of the prototype are replaced by a prism. The final variant of the converter has only one source of illumination, usually a strobotron. The disadvantages consist of low power of illumination and short life, as well as high control voltage. A two-lens condenser is used in the illuminating system for an increase of the enveloping angle. The new variant has an improved efficiency by forming a narrow ray of light approaching the width of rule marking. There are no cross distortions because only two rays are projected on the screen rule. The micro-objective and the correction lens provide the final formation of the light ray. The width of the latter is the main limiting factor of the resolving capacity in the system. The additionally illuminated graduations of the object-rule do not affect the system as they are projected beyond the screen rule. The photomultiplier  $\phi 31$ -31 (FEU-31) with a high threshold sensitivity is employed for recording. The information pulses from the magnetic tape and the converter (feedback) are random in time. A pulse distribution is provided for eliminating errors in the reversible counter. The separation time is so chosen as to ensure normal operation. The circuit of the rever-

Card 2/3

Some design features ...

<sup>32554</sup>  
S/145/61/000/012/007/007  
D221/D302

sible counter includes four digital and one sign trigger, two multi-vibrators and one control trigger. The state of the latter determines whether the operation is addition or subtraction. Valves provide the additional control depending on the sign of the input signal. The required delay is secured with one monovibrator OD-1 (OD-1). The decoder consists of two identical circuits working in succession, depending on the state of the sign trigger in the reversible counter. Its operation is based on the summation of currents, so that the output voltage of the amplifying valve is proportional to the input code. The voltage steps can have an amplitude of several volts. The coils of the electric machine amplifier form the load of the output stages. The negative feedback consisting of a tachogenerator, and a loop provides the stabilization of the system. There are 3 figures and 2 Soviet-bloc references.

ASSOCIATION: MVTU im. N. E. Baumana (MVTU im. N. E. Bauman)

Card 3/3

S/146/61/004/005/007/011  
D221/D305

9,7300

AUTHOR: Zverev, A.Ye.

TITLE: Analysis of accuracy in the conversion of small linear displacement into a digital code by the (DP) converter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 4, no. 5, 1961, 84-93

TEXT: The paper is devoted to analyzing accuracy in the operation of analog-to-digit conversion, where the error is due to deviations in the actual values of element parameters from their calculated magnitudes. Only the errors caused by the dynamic actions within the element are being considered. The simplified diagram of a DP converter is shown in Fig. 1. It comprises two scales, an illuminator and a correcting optical device, as well as an electronic part. The motion of the object-scale produces a displacement of the light over the screen scale, and modulates the photo-

Card 1/5

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S/146/61/004/005/007/011  
D221/D305

Analysis of accuracy...

cell output. A plot is given of the relationship between the projection of the fascicle of light rays which passes through the graduation apertures of the object-scale ( $\phi$ ) and the thickness of the marking  $\phi$ , for different values of the constant magnification coefficient  $\beta$ . The lower limit of  $\phi$  is controlled by the accuracy of reading required, and by the condition of reliability of conversion  $b - d > \phi'$ . The difference in the intensity of light should be greater than the absolute value of the threshold signal. Two equations are quoted which determine the relationship between  $\phi'$  and  $\phi$ . These equations take into account the distance between the image plane and the rear aperture diaphragm, the diameter of the output micro-objective, the length of the light wave, and in one expression also the coefficient of diffraction. The reduction of graduation width causes a widening of the null maximum over the screen rule, whereas its enlargement brings closer the minima towards the center of the screen aperture, and the null maximum becomes more sharp. The resolving capacity of optical counting depends on the length of the light wave only, and the diffraction diffi-

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Analysis of accuracy...

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D221/D305

culties appear when the aperture is below  $4 \mu$ . Both rules are made of glass with small linear expansion coefficient of the types of quartz, "пирекс" (pireks), etc. Other optical properties of glass are not important. The rules were graduated at the Leningradskiy optiko-mekhanicheskii zavod (Leningrad Optical and Mechanical Plant) and the distribution of pitch errors was investigated. The description is given of plotting curves of errors which are used to determine the permitted limits in pitch errors. A plot is also illustrated of the coefficient  $\gamma = \frac{b-d}{\phi}$ , determined by the ratio

of  $t_p$  and  $T_t$  which are respectively the duration of pulse and the period between the pulses. The various machining and assembly inaccuracies result in changes of the magnitude in the light measured at the output. In the ideal case the total amount of light beam is given by  $F_b = \frac{F'_3 h^2 d}{\beta^2}$ , where  $F'_3 = \frac{F_3}{s_{g1}}$ ;  $F_3$  is the light beam

falling on the screen rule;  $s_{g1}$  is the area of graduation on the

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D221/D305

Analysis of accuracy...

object-rule;  $s_{g2}$  is the area of screen-rule graduation [Abstracter's note: It appears that  $h_2$  in the equation should read  $s_{g2}$ ];  $\beta$  is the magnification coefficient. This is followed by a mathematical analysis of the increment of light beam  $\Delta F_b$ . Graphs are shown indicating the relationship between the latter and the size of individual errors. From above, the following conclusions are made. There are errors which affect little the total light beam, such as deviations in the form of workpiece ( $\Delta x$ ), temperature etc, or those which are important. The last category comprises errors in the pitch of the object-rule, misalignment of graduations etc. The distribution of pitch errors permits the selection of rule for a given conversion quantity, and thus determines the possible read-out  $\delta$ . The over-all dimensions of the analog-to-digital converter provides the specification for  $\beta$ . These two quantities determine the pitch of the screen rule  $b$ . The pitch of object-rule  $a$ , is governed by the technological considerations and the light sensitive area of the photo cell. The width of graduations  $\phi$ , is

Card 4/5

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D221/D305

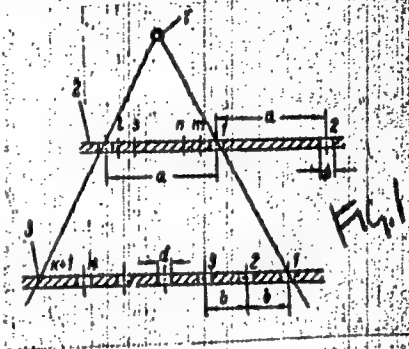
### Analysis of accuracy...

given by graphs, whereas a table provides the values of  $t_p$  and  $T_p$  for a given  $V$ . This article was recommended by the Kafedra matematicheskikh mashin (Department of Mathematical Machines). There are 6 figures, 2 tables and 8 Soviet-bloc references.

ASSOCIATION: Moskovskoye vyssheye tekhnicheskoye uchilishche im. Bauman (Moscow Higher Technical College im. Bauman)

SUBMITTED: February 13, 1961

Fig. 1.  
The basic diagram  
of the converter



ZVEREV, Aleksandr Yevgen'yevich; KURGANOV, Viktor Dmitriyevich;  
ZVEREV, S.A., dots., red.

[Electron-tube and transistor pulse signal amplifiers; a  
textbook] Elektronnye i poluprovodnikovye usiliteli im-  
pul'snykh signalov; uchebnoe posobie. Moskva, Mosk.  
aviatsionnyi tekhnologicheskii in-t, 1965. 219 p.  
(MIRA 18:11)

**TOLSTOV, A.: ZVEREV, B.**

On the construction sites of the Krasnoyarsk Economic Region.  
Stroitel' no.3:3 Mr '60. (MIRA 13:6)

1. Nachal'nik upravleniya stroitel'stva Krasnoyarskogo sovnarkhoza (for Zverev). 2. Spetsial'nyy korrespondent zhurnala "Stroitel' (for Tolstov).  
(Krasnoyarsk Territory--Construction industry)

ZHEREKHOV, N., polkovnik; ZVEREV, B., kand.istoricheskikh nauk, kapitan.

Immortal feat of Russian soldiers; on the 100th anniversary of the  
heroic defense of Sevastopol. Voen.vest. 34 no.10:11-25 O '54.  
(MIRA 10:10)

(Sevastopol--Siege, 1854-1855)

"Voyaging on the seas" by IU. Davydov. Reviewed by B. Zverev.  
Geog.v shkole 20 no.4:76-77 J1-Ag '57. (MIRA 10:7)  
(Matiushkin, Fedor Fedorovich, 1799-1872)  
(Davydov, Yu.)

KOLTAKOV, L.G., inzh.; ZVEREV, B.A.

Boring of reactor tubes. Khim.mash. no.1:41-42 Ja '60.

(MIRA 13:5)

(Chemical engineering—Equipment and supplies)  
(Polyethylene)

ROLOSOV, M.I., kand.tekhn.nauk; STROGANOV, A.I., kand.tekhn.nauk; KEYS,  
N.V., inzh.; BOGATENKOV, V.F., kand.tekhn.nauk; VAYNSHTEYN, O.Ya.,  
inzh.; DANILOV, A.M., inzh.; ZVEREV, B.F., inzh.; ANTROPOVA, N.G.,  
inzh.; KHRYUKINA, V.A., inzh.

Use of silicon-chromium in open-hearth smelting of steel, Stal 20  
no. 7:607-608 J1 '61. (MIRA 14:5)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii;  
Chelyabinskiy i Zlatoustovskiy metallurgicheskiye zavody.  
(Steel—Metallurgy) (Silicon-chromium alloys)



BOGATYKH, V.P.; VASILEVA, O.Ya.; VEGEV, S.S.; KOLOSOV, M.I.; LUBENETS,  
I.A.; MOROZOV, A.N.; POVOLOTSKIY, D.Ya.; STROGANOV, A.I.

Desiliconization of open-hearth pig iron in the mixer. Izv. vys.  
ucheb. zav.; chern. met. 4 no.8:32-36 '61. (MIRA 14:9)

1. Chelyabinskiy metallurgicheskiy zavod, Chelyabinskiy nauchno-  
issledovatel'skiy institut metallurgii i Chelyabinskiy politekhnich-  
eskiy institut.

(Cast iron--Metallurgy)

BOGATENKOV, V.F.; VAYNSHTEYN, O.Ya.; ZVEREV, B.F.; FIRSOV, S.G.

Improving the method of phosphorus removal during steel smelting.  
Metallurg 6 no.11:11-13 N '61. (MIRA 14:11)

1. Chelyabinskiy metallurgicheskiy zavod i Chelyabinskiy  
nauchno-issledovatel'skiy institut metallurgii.  
(Steel--Metallurgy)

STROGANOV, Anatoliy Il'ich; PETROV, Aleksey Konstantinovich;  
ZVEREV, Boris Fedorovich; SVET, Ye.B., red.; KUZNETSOVA, O.Ya.,  
tekhn. red.

[Economy of magnesite in steel smelting] ~~Ekonomiya magnézita v~~  
staleplavil'nom proizvodstve. Cheliabinsk, Cheliabinskoe knizh-  
noe izd-vo, 1962. 41 p. (MIRA 16:1)

(Smelting furnaces--Maintenance and repair)  
(Refractory materials)

1962  
1-1  
Cheliabinsk  
tekhn. red.

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not

X-ray diffraction study of irradiated polyamides. Plast. massy  
no.1:33-36 '65. (MIRA 18:4)

ZVEREV, B.I., kand. istoricheskikh nauk, podpolkovnik

Mikhail Vasil'evich Frunze's work for strengthening the combat  
power of the Soviet Navy. Mor. sbor. 48 no.1:24-33 Ja '65.  
(MIRA 18:4)

"APPROVED FOR RELEASE: Thursday, September 26, 2002. CIA-RDP86-00513R002065710003-7  
APPROVED FOR RELEASE: Thursday, September 26, 2002. CIA-RDP86-00513R002065710003-7"  
AFANAS'YEV, A.M.; PAVLOV, S.A.; KARPOV, V.L.; ZVEREV, B.I.

X-ray diffraction study of modified polyamides. Plast. massy no.2,32-  
34 '65. (MIRA 18:7)

ZVEREV, B.I., kand. istoricheskikh nauk, podpolkovnik

leninist concern for the rehabilitation and building of the  
navy. Mor. soor. 47 no.4:10-18 Ap '64.

(MIRA 18:7)

AFANAS'YEV, A.M.; PAVLOV, S.A.; KARPOV, V.I.; ZVEREV, B.I.

X-ray diffraction examination of polyamide films cast from  
irradiated solutions. Plast. massy no.4:52-55 '65.

(MIRA 18:6)





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APPROVED FOR RELEASE: Thursday, September 26, 2002

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CIA-RDP86-00513R002065710003-7

ACC NR: AP6013597

on the basis of AG-salt-SC-salt and epsilon-caprolactum in a 1:1:1 ratio, was also used in the study. It was concluded that the introduction of considerable quantities of trivalent chromium salts into a solution of mixed polyamides results in the loss of crystallinity of the film material obtained. The action of gamma radiation up to 200 milliroentgen doses does not cause substantial changes in structure. Further, when the content of the chromium chloride in the polyamide is insignificant its action is expressed in the fixation of the structure formed; when the content is high, it is expressed in the opening of the chains and blocks of macromolecules and in the disturbance of their ordering. Finally, the introduction of glycerine accelerates the loss of crystallinity of the polyamide S-6 during radiation but at a lower rate than the radiation-caused changes of the mechanical and other properties of this polyamide. The structure of polyamides AK 50/50 and S-6, even after addition of a plasticizer, exhibits considerable stability in the action of radiation in the dose range up to 500 milliroentgen dose. Orig. art. has: 2 figures and 3 tables. [JPRS]

SUB CODE: 11, 18 / SUBM DATE: none / ORIG REF: 009

Card 2/2 *MS*

BOGATENKOV, V.F.; VAINSTEIN, O.I. [Vavnshteyn, O. Ya.]; ZVEREV, B.F.; KOLOSOV,  
M. I.; LUBENET, I. A. [Lubenets, I.A.]; MOROZOV, A. N.; POVOLOTKY, D.I.  
[Povolotskiy, D.Ya.]; STROGANOV, A.I.

Desilicification of Martin iron in mixers. Analele metalurgie 16 no.1:  
21-27 Ja-Mr '62.

STROGANOV, A.I., kand.tekhn.nauk; BOGATENKOV, V.F., kand.tekhn.nauk;  
KOLOSOV, M.I., kand.tekhn.nauk; ZVEREV, B.F., inzh.; DAVIDYUK,  
V.N., inzh.; POPOV, R.V., tekhnik

Heat balance of the riser head of an ingot. Stal' 22 no.1:27-29  
Ja '62. (MIRA 14:12)

(Steel ingots) (Heat--Transmission)

8/133/50/000/007/0034/016

**THEORETICAL, Biol', 1960, No. 7, pp. 607 - 608**

Card 8/3

Card 2/3

Card 3/3

ANASHKIN, I.A., kapitan 1 ranga; BARABOLYA, P.D., polkovnik yuridicheskoy sluzhby; VOLKOV, A.S., inzh.-kapitan 1 ranga; VOROB'YEV, A.P., kapitan 1 ranga; VASIL'YEV, I.V., kapitan 1 ranga zapasa; V'YUNENKO, N.P., kand.voyenno-morskikh nauk, kapitan 1 ranga; GENKIN, A.L., dotsent, kand.tekhn.nauk, inzhener-kontr-admiral; YEREMENKO, B.Ya., kapitan 1 ranga; ZVEREV, B.I., kand.istor.nauk, mayor; KAZANKOV, A.A., kapitan 1 ranga; KOZIN, K.K., kapitan 1 ranga zapasa; KOLYADA, N.I., kapitan 1 ranga zapasa; KULINICH, D.D., inzh.-kapitan 1 ranga; LOBACH-ZHUCHENKO, M.B., dotsent, inzhener-kapitan 2 ranga zapasa; MASHAROV, A.I., polkovnik zapasa; MYASISHCHEV, V.I., inzhener kontr-admiral; PETROV, L.G., kapitan 1 ranga v otstavke; PROKOF'YEV, V.M., kapitan 1 ranga; POZNAKHIRKO, A.S., kapitan 1 ranga zapasa;  
(Continued on next card)

ANASHKIN, I.A.---(continued) Card 2.

PYASKOVSKIY, G.M., polkovnik; SINITSYN, N.I., polkovnik. Prinimali uchastiye: ANDREYEV, V.V., kapitan 1 ranga; IVANOV, V.P., inzhener-kapitan 2 ranga; CHERNOUS'KO, L.D., inzhener-kapitan 1 ranga; SHIKANOV, Ye.P., inzhener-kapitan 2 ranga. PADEYEV, V.G., vitse-admiral zapasa, glavnyy red.; GERNGROSS, V.M., kapitan 1 ranga zapasa, red.; STAROV, N.N., kapitan 1 ranga v otstavke, red.; SOKOLOVA, G.F., tekhn.red.

[Marine dictionary] Morskoi slovar'. Moskva, Voen.izd-vo M-ya obor. SSSR. Vol.2. 0 - IA. 1959. 440 p. (MIRA 12:12)

(Naval art and science--Dictionaries)  
(Merchant marine--Dictionaries)

✓ Disordering processes in crystalline polymers under action of nuclear radiations. V. A. Kabanov and E. I. Zvereva. *Sovetsk Rabot Radiatsion. Khim. Tekh. Vost. SSSR* 1955, 215-22. ~ Irradiation with a fast electron beam impact on polyethylene specimens leads to increase of the amorphous state of the polymer. ~ Spectra of the x-ray pattern. Calculation of the effect of dose on the change is made. The results are interpreted in terms of free radicals and their combination reaction. ~ M. L.

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ZVEREV, B. I., KARPOV, V. L. and LESHCHENKO, S. S.

"Processes of Phase Transformations in Polymers Under the Action of  
Nuclear Radiation"

Truly Transactions of the First Conference on Radioaction Chemistry, Moscow,  
Izd-vo AN SSSR, 1958. 330pp.  
Conference -25-30 March 1957, Moscow

Untiring efficiency promoter. Kolyma 21 no.3:36 Mr '59.  
(MIRA 12:6)  
(Magadan Province--Prospecting--Equipment and supplies)

SHAKHONYANTS,

Georgiy Mikhaylovich, doktor tekhn. nauk; AMELIN, S.V., prof.,  
retsenzent; KONSTANTINOV, V.N., dots., retsenzent; SMIRNOV, M.P.,  
retsenzent; YAKOVLEV, V.F., retsenzent; BOCHENKOV, M.S., kand.tekhn.  
nauk, retsenzent; BROMBERG, Ye.M., retsenzent; YERSHKOV, O.P., re-  
tsenzent; ZVEREV, B.N., retsenzent; ZOLOTARSKIY, A.F., retsenzent;  
IVASHCHENKO, G.I., retsenzent; LINEV, S.A., retsenzent; MARKAR'YAN, M.A.,  
retsenzent; POPOV, V.V., retsenzent; POPOV, S.N., retsenzent; SEREBRENNIKOV, V.V.  
retsenzent; SHAFRANOVSKIY, A.K., retsenzent; NOVITSKIY, G.I., inzh., retsen-  
zent; VIKTOROV, I.I., kand.tekhn.nauk, retsenzent; VYSOTSKIY, A.F.,  
kand.tekhn.nauk, retsenzent; SAATCHYAN, G.G., kand.tekhn.nauk, re-  
tsenzent; YAKOVLEVA, Ye.A., kand.tekhn.nauk, retsenzent; TITOV, V.P.,  
kand.tekhn.nauk, retsenzent; GRUSHEVOY, N.G., inzh., red.; BROMBERG,  
Ye.M., kand.tekhn.nauk, red.; KHITROV, P.A., tekhn. red.

[Railroad tracks] Zheleznodorozhnyi put'. Moskva, Vses.izdatel'sko-  
poligr.ob"edinenie M-va putei soobshchenia, 1961. 615 p.

(MIRA 14:12)

1. Kafedra "Zheleznodorozhnyy put'" Leningradskogo instituta inzhene-  
rov zheleznodorozhnogo transporta (for Amelin, Konstantinov, Smirnov,  
Yakovlev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut zhelezn-  
odorozhnogo transporta (for Bochenkov, Bromberg, Yershkov, Zverev, Zo-  
lotarskiy, Ivashchenko, Linev, Markar'yan, Popov, V.V., Popov, S.N.,  
Serebrennikov, Shafranovskiy, Novitskiy). 3. Vsesoyuznyy nauchno-issledo-  
vatel'skiy institut transportnogo stroitel'stva (for Viktorov, Vysotskiy,  
Saatchyan, Yakovleva, Titov)

(Railroads--Track)

(Railroad engineering)

ZVEREV, B.N., kandidat tekhnicheskikh nauk.

Investigation of stress in rail joints. Trudy TSMII MPS no.111:  
147-169 '55. (MLBA 9:5)  
(Railroads--Rails)

**ZVEREV, B.N., kandidat tekhnicheskikh nauk**

**General premises for changing over to new type rail fastenings.**

**Trudy TSNII MPS no. 85:4-9 '55. (MLRA 8:11)**  
**(Railroads--Rails--Fastenings)**

**ZVEREV, B.N., kandidat tekhnicheskikh nauk**

**Designs for new type rail fastenings. Trudy TSNII MPS no. 85:10-38  
'55. (MLRA 8:11)  
(Railroads--Rails--Fastenings)**

ZVEREV, B.N., kand. tekhn. nauk; PETROV, N.V., kand. tekhn. nauk;  
GAYDAMAKA, P.S., inzh.; YAKHOV, M.S., kand. tekhn. nauk;  
PETROVA, V.L., red.; DROZDOVA, N.D., tekhn. red.

[New design for rail fastenings] Novye konstruktsii rel'-  
sovykh skreplenii. [By] B.N.Zverev i dr. Moskva, Transhel-  
dorizdat, 1963. 62 p. (MIRA 16:7)

(Railroads--Rails--Fastenings)

Chemical resistance of glass. N. K. Davitov, N. P. Zverev, and R. Ya. Khvilitsh. *Zhur. Priklad. Khim.* (J. Applied Chem.) 22, 235-9 (1949).--Chem. resistance of glass was detd. by leaching out powders and plates. With powders, the ground glass was passed through sieves having 64 and 144 openings per sq. cm., the grains retained on the 144 sieve were washed free from dust, and 2 g. was treated for 1 hr. at the b.p. with 80 ml. of water previously heated to boiling. After treatment, the soln. was titrated with 0.01 N HCl in the presence of methyl red. The surface chem. resistance was detd. by treating 10 X 4 cm. plates in water at 80° for 3 hrs. Chem. resistance was expressed as mg. Na<sub>2</sub>O removed from a sq. in. of surface; detn. was made by titrating the soln. with 0.01 N HCl. In addn. the extent of annealing was detd. by measuring the double refraction in a polarimeter. There seemed to be no relationship between the chem. compn. and chem. resistance of the powder. The surface resistance  $A_s$  can be expressed by  $A_s = K[A_p/(a + P)]$ , where  $A_p$  is the resistance of the powder,  $K$  is a proportionality coeff. which depends on the condition of the surface,  $a$  is a coeff. which includes other factors not taken into account, and  $P$  is the stress in the glass. Treatment of plates for 8, 16, and 24 hrs. in a shower chamber with running water of pH = 8-8.5 at 88° reduced the chem. resistance; the reduction was less for well-annealed surface. Plates were also treated with 5% aluminum nitrate soln. at room temp. for 24 hrs., then washed with 5% HCl, and tested for chem. resistance before and after treatment in the shower chamber. In each case, the aluminum nitrate increased the chem. resistance. Poorly annealed glass has a low chem. resistance because of the

micropores and microcracks on the surface. Treatment with aluminum nitrate results in adsorption of  $Al(OH)_3$  on the surface of pores and cracks; this increases the resistance, and reduces further formation of pores and cracks. Use of aluminum nitrate to increase chem. resistance of glass may find application in industry. B. Z. K.

527-571-2312



ARGENTIN, N.I.; BALATOV, P.S.; ZVEREV, B.P.; IVANOV, I.A.; KRUGLIY, S.M.;  
NIMY, I.M.; FLEYSHEMAN, V.G.; KHAIN, V.A.; SHUR, V.A.; EL'SKIY, V.N.

Condensation of a solution in vacuum evaporator installations.  
Prom.energ. 15 no.4:15-16 Ap '60. (MIRA 13:6)  
(Evaporating appliances)

DOL'DINOV, A.L.; ZVEREV, B.P.; IZRAILEVA, S.B.; LUKHOVITSKIY, V.I.;  
SHABALIN, A.A.

Purification of mercury-containing waste waters. Khim.prom.  
no.9:610-612 Ag '62. (MIRA 15:9)  
(Sewage--Purification)  
(Mercury)

ACCESSION NR: AT3007254

S/2952/63/000/000/0056/0067

AUTHORS: Zvyagin, V. I.; Lobanov, Ye. M.; Zverev, B. P.; Lenchenko, V. M.

TITLE: Employment of the reaction B-super-10 (n, alpha) Li-super-7 for the determination of boron and silicon

SOURCE: Radiatsion. efekty\* v tverd. telakh. Tashkent, Izd-vo AN UzbSSR, 1963, 56-67

TOPIC TAGS: silicon, Si, boron, B, impurity, acceptor element, isotope, B-super-10 (n, alpha) Li-super-7 reaction, pulse, pulse amplitude, diode

ABSTRACT: The paper describes an experimental investigation and sets forth theoretical relationships governing the presence of the extremely active acceptor element B in Si. The reaction  $B^{10}(n, \alpha) Li^7$  for neutrons with an energy of 0.03 ev has a large cross section (4,000 barn). This reaction yields an  $\alpha$  particle with an energy of 1.47 Mev, which has a short path in Si (appx. 5 micron) and a  $Li^7$  nucleus with 0.88 Mev energy. This particle and this nucleus are distinguished by their great total energy (2.35 Mev) and their great ionization density which affords a highly effective registration if the carrier medium exhibits counting properties. In this respect Si is a very convenient material. The block scheme of the measuring

Card 1/2

ACCESSION NR: AT3007254

equipment employed is described. It comprises a Si diode, a power-supply battery, a load resistance, and a preamplifier, all of which are placed in an aluminum shield and are placed at the output of the horizontal channel of the reactor. The pulses arising in a Si n-p junction irradiated with reactor neutrons are rendered visible in an oscillogram. It is shown that the irradiation of Si junctions with reactor neutrons provides a fundamentally sound means for the determination of some impurities in the material, especially H and B. It is also shown how a junction can be employed as a fast-neutron counter, even though only for assessment purposes. The theory of the formation of the pulses in the surface-barrier n-p junction is traced, using an equivalent circuit to represent the surface-hole and -p junction. Expressions are developed for  $I(t)$  by the solution of the diffusion equation for various particular cases, depending on whether the point source of the charge lies within the n region or the region of body charge, or whether the track of the particle lies entirely within the n region. The formulas obtained will be employed for the calculation of the effective volume for prescribed bounds of the changes of the amplitude of the pulses excited by the neutrons in a diode and also for the calculation of the pulse-amplitude spectra. Orig. art. has: 6 figures and 17 numbered equations.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 14Oct63

ENCL: 00

SUB CODE: PH, EL

NO REF SOV: 003

OTHER: 004

Card 2/2

LOBANOV, Ye.M.; ZVYAGIN, V.I.; KIST, A.A.; ZVEREV, B.P.; SVIRIDOVA, A.I.;  
MOSKOVTSOVA, G.A.

Determination of manganese in silicon by the radioactivation  
method. Zhur. anal. khim. 18 no.11:1349-1355 N '63.

(MIRA 17:1)

1. Institut yadernoy fiziki AN UzSSR, Tashkent.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00013R002005710001-7  
ACCESSION NR: AT4048913

CONFIDENTIAL

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002005710008-7

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002005710008-7

ACCESSION NR: AT4046914

RIVAYEV, U.M.; ZVEREV, B.P.

Use of collimated beam of nuclear radiation in the local irradiation of experimental animals. Uzb. biol. zhur. 9 no.2:17-20 '65.  
(MIRA 18:5)

1. Tashkentskiy gosudarstvennyy meditsinskiy institut.



YERBY, P. S.  
Inzh., SHIPLOV, P. I., Inzh.

Standard buildings of Moscow automatic telephone stations. Gor. khoz.  
Mosk. 34 no.11:27-28 N '60. (MIRA 13:11)  
(Moscow Telephone, Automatic)

S/759/62/000/004/007/016  
D207/D308

AUTHORS: Zverev, B. V., Sobenin, N. P. and Shchedrin, I. S.

TITLE: Parametric representation of the dispersion curve of a circular diaphragm-type waveguide. I

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 4, 1962, 52-69

TEXT: It is difficult to calculate or measure the dispersion curve of a diaphragm-type waveguide, i.e. the dependence of the phase velocity in the waveguide on the frequency of the power supply. It is more convenient to use parametric curves for determination of the frequency of a particular wave mode in a wide range of waveguide dimensions, wavelengths and phase velocities. The authors first derived the dispersion equation in a form convenient for parametric representation. Then they measured the resonance frequencies of the  $0, \pi/4, \pi/3, \pi/2, 2/3\pi, 3/4\pi, \pi$  modes using an oscillator  $\Gamma C-10$  (GS-10) consisting of several rings and diaphragms held in a press  $\Pi P A-5$  (PGL-5) in order to avoid any change

Card 1/2

Parametric representation of ...

S/759/62/000/004/007/016  
D207/D308

in dimensions. Parametric curves are given for the wave modes  $\pi/4$ ,  $\pi/3$ ,  $2/3\pi$ ,  $3/4\pi$ , derived from these resonance frequencies. From these curves one can plot parametric nomograms for calculations of the group velocity, derivatives of the phase velocity and of the frequency with respect to the waveguide dimensions, derivatives of the phase velocity with respect to the frequency, etc. The results used to plot the parametric curves may also be employed for the determination of the coefficients occurring in the series expansion of the dispersion curve (see Part II). There are 5 figures and 8 tables.

ZVEREV, B.V.; SOHENIN, N.P.

Use of the resonance method in tuning circular septate wave  
guides of linear accelerators. Prib. i tekhn. eksp. 10 no. 5:  
26-29 S-Q '65. (MIRA 19:1)

1. Moskovskiy inzhenerno-fizicheskiy institut. Submitted  
Sept. 12, 1964.

ZVEREV, B.V.; SOBENIN, N.P.; TRAGOV, A.G.; SHCHEDRIN, I.S.

Determination of attenuation in circular septate wave guides.  
Uskoriteli no.6:21-28 '64. (MIRA 18:2)

ZVEREV, B.V.; SOBENIN, N.P.; SHCHEDRIN, I.S.

Parametrization of the dispersion curve of a round iris wave  
guide. Part 1. Uskoriteli no. 4:52-69 '62. (MIRA 17:5)

ACC NR: AT6017517

SOURCE CODE: UR/2759/65/000/007/0176/0183

110  
B+1

AUTHOR: Zverev, B. V.; Sobenin, N. P.

ORG: none\*

TITLE: Graphical representation of the high frequency characteristics of the hybrid modes  $E_{11}$  and  $H_{11}$  in a cylindrical waveguide loaded with a diaphragm

SOURCE: \*Moscow. Inzhenerno-fizicheskii institut. Uskoriteli, no. 7, 1965, 176-183

TOPIC TAGS: particle accelerator component, relativistic particle, waveguide

ABSTRACT: Experimental curves are given for designing a diaphragm waveguide to be used as a high frequency particle separator. The curves are based on resonant frequency measurements. The high frequency characteristics were determined as functions of  $a/b$  where  $2b$  is the inner diameter of the diaphragm waveguide and  $2a$  is the diameter in the diaphragm opening. Figure 1 shows the group velocity curve as a function of  $a/b$ . The dispersion can be calculated, knowing the group velocity, and is graphed in figure 2. Since the partial derivatives of the frequency relative to the design parameters  $a$  and  $D$  (where  $D$  is the period) are necessary for the final design of high frequency particle separators, the essential curves in figures 3 and 4 are the essential features of this paper. Orig. art. has: 5 figures, 2 tables, 12 formulas.

ACC NR: AT6017517

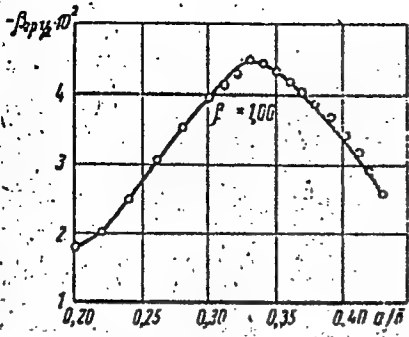


Fig. 1

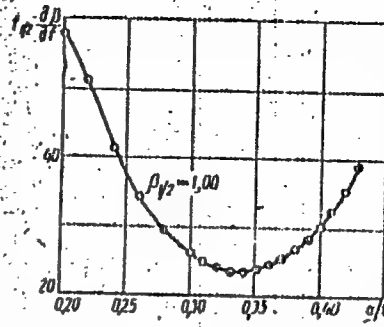


Fig. 2



ACC NR: AT6017517

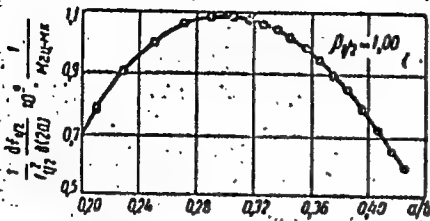


Fig. 3. Graph of the derivative of the frequency of  $\pi/2$ -type oscillations with respect to the diameter of the diaphragm opening.

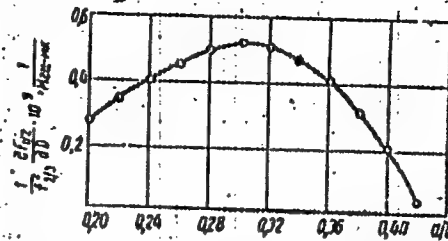


Fig. 4. Graph of the derivative of the frequency of  $\pi/2$ -type oscillations with respect to the period.

SUB CODE: 20,09/

SUBM DATE: none/

ORIG REF: 005

Card 3/3

11b

Representation of the principal high-frequency characteristics of a round septate waveguide in graphical form.  
Radiotekh. i elektron. 8 no.11:1945-1949 N '63.  
(MIRA 17:1)

S/759/62/000/004/006/016  
D207/D308

**AUTHORS:** Gryzlov, A. V., Zverev, B. V. and Sobenin, N. P.

**TITLE:** Parametric curves for determination of frequency shifts on changing the dimensions of a circular diaphragm-type waveguide

**SOURCE:** Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 4, 1962, 40-51

**TEXT:** In designing linear electron accelerators it is often necessary to know the variation of the frequency of a particular mode with the dimensions of a waveguide. To ease the solution of this problem, formulas are derived for the calculation of the derivatives of the frequency with respect to waveguide dimensions, and nomograms and tables are given for calculations of these derivatives for  $\pi/2$  modes for practically any waveguide dimensions, any frequency or phase velocity. A simple method is given for calculating these derivatives for other oscillation modes. There are 4 figures and 6 tables.

Card 1/1

L 42869-66

EWI(1)/EWI(M)

ISP(C)

SOURCE CODE: UR/0120/65/000/005/0026/0029

ACC NR: AP5027002

AUTHOR: Zverev, B. V.; Sobenin, N. P.ORG: Moscow Engineering-Physics Institute (Moskovskiy Inzhenerno-fizicheskiy Institut)TITLE: Adjustment of circular iris waveguides of linear accelerators by the resonance method

SOURCE: Pribery i tekhnika eksperimenta, no. 5, 1965, 26-29

TOPIC TAGS: waveguide iris, circular waveguide, linear accelerator

ABSTRACT: The accuracy of measuring the frequency in circular iris waveguide resonators is estimated in this article. A method is described which permits adjusting such waveguides with smoothly changing dimensions even with tolerances of  $\pm 50\mu$ . The bandwidth characteristic of the waveguide after adjustment is satisfactory from the point of view of stable operation of the HF oscillator, and the law of change of the phase of velocity is maintained with an error of less than 1%. The examined method of adjusting the units of the iris waveguide has obvious advantages over other methods in that the components of the waveguide are adjusted directly, which precludes errors associated with tolerances for the size of the waveguide. The effect of the holes in the rings is taken into account and the errors associated with the imperfection of the silencing devices and the effect of the coupling loops are eliminated. The possibilities of

Card 1/2

UDC: 621.372.8

ACC NR: AP5027002

the method are not limited only to circular iris waveguides made up of rings and iris diaphragms. This method can be developed for adjusting iris waveguides manufactured in a different manner and for adjusting other decelerating systems with constant or slowly changing dimensions of the components. Orig. art. has: 5 figures and 1 table.

SUB CODE: 09/ SUBM DATE: 12Sep64/ ORIG REF: 006/ OTH REF: 001

Card 2/2

*Ldh*

ACC NR: AT6017508

SOURCE CODE: UR/2759/65/000/007/0054/0065

AUTHOR: Zverev, B. V.; Sobenin, N. P.

ORG: none

41  
B+1

TITLE: Graphical representation of basic high frequency characteristics of a cylindrical waveguide with diaphragms and with  $2\pi/3$  type of oscillations

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 54-65

TOPIC TAGS: electron accelerator, circular waveguide, particle accelerator component

ABSTRACT: Ten families of curves and data are presented which were obtained from resonance measurements on a cylindrical waveguide with diaphragms. All curves and data are related to the basic high frequency oscillations of the  $2\pi/3$  type. The curves are sufficiently accurate over a large interval of variation in the waveguide design parameters. Orig. art. has: 2 tables, 7 formulas, 10 figures.

SUB CODE: 20109/

SUBM DATE: none/

ORIG REF: 005/

OTH REF: 004

Card 1/1 hs



ACC NR: AT6017516

ment of the electric field; at  $r=0$  and  $r=b$  (radius of the guide)  $E_z$  and  $E_\theta$  vanish.  $E_r$  is maximum at  $r=0$  and  $H_r$  is maximum near the opening of the diaphragm and is perpendicular on the plane through the  $z$ -axis and the coupling loop. Such a waveguide can then be used as an ultrahigh frequency separator for relativistic particles. Orig. art. has: 6 figures, 2 tables.

SUB CODE: 20,09/

SUBM DATE: none/

ORIG REF: 002/

OTH REF: 003



GERSHGORN, M.A.; SVIRIDENKO, F.F.; KAZARNOVSKIY, D.S.; KHAUTSOVA, I.P.;  
POPOVA, A.N.; FRADINA, M.G.; Prinizali uchastiye: LEKASHOV, G.G.;  
RUDOL'SKIY, N.L.; SLEPKANEV, N.P.; PLISKANOVSKIY, S.T.; GORBANEV,  
Ya.S.; BUL'SKIY, M.T. [deceased]; ARKHANGEL'SKIY, Yu.N.; SHAROV,  
B.A.; VISTOROVSKIY, N.T.; RAKHANSKIY, B.I.; SAPOZHKOV, V.Ye.;  
RYABININ, N.G.; KARAKULINA, R.R.; FADEYEVA, A.M.; ZVEREV, D.A.

Improving the production of high-strength rails by alloying  
them with granulated ferrochromium in the ladle. Stal' 25  
no.5:408-411 My '65.

(MIRA 18:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod  
"Azovstal'".

Forage lupine. Nauka i pered.op.v sel'khoz. 7 no.7:32-33 JT '57.  
(Lupine) (MIRA 10:8)

**5888. THE DETECTION OF PERSISTENT FORMS OF DYSENTERY; INDICES  
OF RECOVERY (Russian text) - Zverev E.I. - SOV. MED. 1958, 22/12  
(86-89)**

Of the total of over 1,500 dysentery patients observed, 319 had the chronic form. In addition, 469 acute dysentery patients were observed, all of whom recovered after 2 to 4 weeks, whereas chronic dysentery lasted from 6-12 weeks. Diarrhoea was present in 30-35% of chronic cases, but more characteristic of these cases was constipation, particularly when alternating with diarrhoea, and frequently associated with pus, blood and mucus in the stools. Subfebrile temperatures were recorded in about 50% of all chronic cases.

Anigstein - Galveston, Tex. (L. 6

SUPRON, L.F.; ZVEREV, F.P.; MUKHIN, A.P., prof., red.; POL'SKIY, S.,  
red.; STEPANOVA, N., tekhn.red.

[Medical care of the population subjected to methods of mass  
destruction] Meditsinskoe obespechenie naselenia v usloviakh  
primeneniia sredstv massovogo porazheniia. Pod red. A.P.Mukhina.  
Minak, Gos.izd-vo BSSR. Red.nauchno-tekhn.lit-ry, 1959. 407 p.

(MIRA 12:9)

(ATOMIC MEDICINE)

14(5)

80V/93-58-12-10/16

AUTHOR: Amelin, I.D. and Zverev, F.P.

TITLE: Hydrodynamic Calculations in Analyses of Development of Maykop Oil Deposits of the Khadyzhen Group (K gidrodinamicheskim raschetam pri analize razrabotki maykopskikh zalezhey nefti Khadyzhenskoy gruppy)

PERIODICAL: Neftyanoye khozyaystvo, 1958, Nr 12, pp 46-52 (USSR)

ABSTRACT: The Klyuchevoy Oilfield was discovered in 1951 near the Goryachiy Klyuch Resort in the Krasnodar Kray. The Klyuchevoy belongs to the group of oilfields, located in the western part of the southern border of the Azov-Kuban' Depression, as well as to the Maykop Middle Section (horizons I and II). The outcrop lines of these horizons form the gulflike oil deposits which are extended in the Khadyzhen group of gulfs cropping out in the area of Neftegorsk. To the north the oil deposits are in contact with a strip of water-saturated sand which extends from Neftegorsk to Novo-Dimitriyevskaya Station. This water pressure system is, evidently fed by the Pshekha River Basin. In 1953 I.D. Amelin [Ref 1] suggested a system of hydrodynamic calculations for the determination of the pressure change in the oil deposits at given rates of fluid recovery from the formation. This method which has been successfully applied to the Klyuchevoy Oilfield and to analyses of the oilfield's development proved

Card 1/4

# Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

to be suitable for all oilfields of the Klyuchevoy type. Calculations by this method made it possible to determine also the effect of natural encroachment of edge water on the oilfield's development, the optimum petroleum recovery from the formation, and the relationship between the current recovery of petroleum and the water injection for pressure maintenance purposes. The author presents a scheme of the water pressure system of the gulflike deposits of Kuban' (Fig.1) and of individual deposits (Fig.2) similar to those of the Klyuchevoy Oilfield. He also cites an example of how his method was applied to the Klyuchevoy Oilfield. He also cites an example of how his method was applied to the Klyuchevoy Oilfield and presents the data obtained (Fig. 3 and Tables 1-2). The main formula employed in the calculations is

$$P_g(t) = P_{km} - P_g(t) = \frac{\mu v}{L_k k_{kh}} \sqrt{\frac{4\chi}{\pi L}} \left( Q_{zh} \sqrt{t} + \sum_{i=1}^n \Delta Q_{zh}^i \times \sqrt{t-t_i} \right),$$

where  $P_{km}$  is the initial formation pressure,  $\mu_v$  - the viscosity of the formation's water,  $L_k$  - the width of the formation's water pressure system,  $k$  - the permeability of the formation,  $h$  - the effective capacity of the formation in the water pressure area,  $\chi$  - the piezo conductivity coefficient of the water

# Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

pressure system,  $Q_{zh}^n$  - the initial yield of the formation,  $Q_{zh}^1$  - the intermittent change in the yield of the formation since the time  $t_1$  of the formation's development; in case the formation's yield increases the  $Q_{zh}^1$  has a "plus" sign and in case it decreases the  $Q_{zh}^1$  has a "minus" sign;  $t$  - is the time since the initial development of the formation for which the  $\Delta P_g(t)$  is being determined;  $i = 1, 2, 3$ ;  $n$  - is the number of time units (within the ranges of  $t$ ) characterizing the stable yield of the formation. This following formula was employed in order to arrive at a more accurate prognosis of the pressure change in the formation at any given rates of fluid withdrawn from the formation:

$$P_{zal}(t) = P_{kn} - z_{sr} \left( \frac{\mu v}{L_k kh} \sqrt{\lambda} \sqrt{\frac{4}{\pi}} \times (Q_{zh}^n \sqrt{t} + \sum_{i=1}^n \Delta Q_{zh}^i \sqrt{t-t_1}) \right)$$

where  $P_{zal}$  is the formation pressure and  $z_{sr}$  - the mean error. The authors conclude that this method of calculation made it possible with the aid of hydraulic fracturing to increase the water injection into the wells and consequently increase the petroleum recovery from horizon I by 100 tons per day

Hydrodynamic Calculations in Analyses (Cont.)

SOV/93-58-12-10/16

from horizon II by 150 tons per day without impairing the formation's efficiency. They also conclude that that this method of calculation makes it possible to determine the water loss of injection wells and consequently eliminate the causes responsible for the water loss. There are 3 figures, 2 tables, and 4 Soviet references.

Card 4/4



YUN'KOV, M.G., inzh.; ONISHCHENKO, G.B., inzh.; ZVEREV, G.A., inzh.

Testing an asynchronous rectifier stage under industrial conditions. Vest. electroprom. 32 no.10:13-18 0 '61. (MIRA 14:9)  
(Electric current rectifiers)

S/196/62/000/006/013/018  
E194/E154

AUTHORS: Yun'kov, M.G., Onishchenko, G.B., and Zverev, G.A.  
TITLE: Industrial studies of rectifier-invertor fed  
induction motor drive

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,  
no.6, 1962, 3-4, abstract 6 Kll. (Vestn.  
elektroprom-sti, no.10, 1961, 13-18).

TEXT: Results are given of tests in service on an a.c.  
induction motor drive controlled by rectifier-invertor chain  
used to drive centrifugal compressors of the gas pipeline between  
Stavropol' and Moscow. In this system the speed of the 4500 kW  
wound-rotor induction motor with a rated speed of 1490 r.p.m.  
can be changed smoothly in the range 100-70% of rated speed, thus  
allowing the gas compressor rating to be varied between 100% and  
35%. The rectifier-invertor circuit uses a slip frequency  
converter with an explicit d.c. circuit. The uncontrolled  
rectifier valves convert the rotor slip frequency current to d.c.  
and the invertor converts the d.c. into power frequency (50 c/s)  
a.c. The invertor valves are grid controlled so that the  
Card 1/ 3

Industrial studies of rectifier- ...

S/196/62/000/006/013/018  
E194/E154

inverter e.m.f. can be controlled from the rectified current side, thus the rotor current, torque and motor speeds. The rotor and inverter valves are mercury-arc rectifiers type PM48-1000 x 6 (RMNV-1000 x 6). With the rectifier-converter circuit the utilization of the motor is not impaired so that its rating can be chosen by the usual methods. The rectifier-converter circuit has high efficiency, namely, 0.92-0.88 within the given speed control range. A disadvantage of the rectifier-converter circuit is the low power factor which is 0.67 at maximum speed and 0.43 at 70% rated speed. Experimental curves are given for power factor of the valves and the motor and also curves of the changes in reactive power consumption of individual parts of the system as function of slip. Tests showed that the rectifier-inverter circuit operates well and has good control characteristics, the motor and valves operate reliably, current waveform distortion in the supply lines to the rectifier is slight, no influence of higher harmonics on the operation of other equipment was observed. Further improvement in the asynchronous rectifier-inverter circuit presupposes the use of rotor valves controlled by slip frequency

Card 2/3

Industrial studies of rectifier- ... S/196/62/000/006/013/018  
E194/E154

inverter e.m.f. can be controlled from the rectified current side, thus the rotor current, torque and motor speeds. The rotor and inverter valves are mercury-arc rectifiers type PMHB-1000 x 6 (RMNV-1000 x 6). With the rectifier-converter circuit the utilization of the motor is not impaired so that its rating can be chosen by the usual methods. The rectifier-converter circuit has high efficiency, namely, 0.92-0.88 within the given speed control range. A disadvantage of the rectifier-converter circuit is the low power factor which is 0.67 at maximum speed and 0.43 at 70% rated speed. Experimental curves are given for power factor of the valves and the motor and also curves of the changes in reactive power consumption of individual parts of the system as function of slip. Tests showed that the rectifier-inverter circuit operates well and has good control characteristics, the motor and valves operate reliably, current waveform distortion in the supply lines to the rectifier is slight, no influence of higher harmonics on the operation of other equipment was observed. Further improvement in the asynchronous rectifier-inverter circuit presupposes the use of rotor valves controlled by slip frequency

Card 2/3

Industrial studies of rectifier- ... S/196/62/000/006/013/018  
E194/E154

and improvement in the power factor.  
4 literature references.

[Abstractor's note: Complete translation.]

Card 3/3

21(0)

AUTHORS:

Koryakin, Yu., Isayev, B., Shamanov, M., Zverev, G.

SOV/89-6-6-26/27

TITLE:

Short Encyclopedia "Atomnaya energiya" (Kratkaya entsiklopediya "Atomnaya energiya"). Review (retsenziya)

PERIODICAL:

Atomnaya energiya, 1959, Vol 6, Nr 6, pp 693-695 (USSR)

ABSTRACT:

The authors discuss the above mentioned book which was published in 1959 in Moscow by the Gosudarstvennoye nauchnoye izdatel'stvo "Bol'shaya Sovetskaya Entsiklopediya" (Scientific State Publishing House "Great Soviet Encyclopedia"). There is 1 Soviet reference.

Card 1/1

ZVEREV, G.I.

Surgical treatment of stomach cancer. Vest.khir. no.6:41-43  
162. (MIRA 15:11)

1. Iz Vologodskogo oblastnogo onkologicheskogo dispansera (gl.  
vrach -- G.I. Zverev).  
(STOMACH--CANCER)

ZVEREV, G. I.

Skin cancer in Vologda Province; according to data of the provin-  
cial oncological dispensary. Vop. onk. 8 no.1:98-101 '62.  
(MIRA 15:2)

1. Iz Vologodskogo oblastnogo onkodispensera (glav. vrach -  
N. A. Mataruyev).

(VOLOGDA PROVINCE—SKIN—CANCER)

ZVEREV, G.I.

Postoperative mortality in stomach cancer. Vop.onk. 9 no.1:  
102-105 '63. (MIRA 16:5)

1. Iz Vologorodskogo oblastnogo onkodispensera (glavnyy vrach  
N.A.Mataruyev).

(STOMACH—CANCER) (STOMACH—SURGERY)  
(CANCER—MORTALITY)



PHASE I BOOK EXPLOITATION SOV/3694

Bogoyavlenskiy, Konstantin Nikolayevich, and Grigoriy Ivanovich Zverev

Mekhanicheskoye oborudovaniye dlya obrabotki davleniyem tsvetnykh metallov i splavov (Mechanical Equipment for Pressworking Nonferrous Metals and Alloys) Moscow, Metallurgizdat, 1959. 359 p. Errata slip inserted. 4,200 copies printed.

Ed.: G.A. Smolyanov; Ed. of Publishing House: M.R. Lanovskaya; Tech. Ed.: V.V. Mikhaylova.

PURPOSE: This book is intended as a textbook in tekhnikums for a course on "Mechanical Equipment in Metallurgical Plants". It may also be of value to technical personnel in metallurgical establishments.

COVERAGE: This book is a continuation of the book by V.V. Zholobov, K.N. Bogoyavlenskiy, M.Ye. Zubtsov, A.D. Landikhov, E.M. Lekarenko, N.N. Postnikov: Obrabotka tsvetnykh metallov i splavov davleniyem (Pressworking of Nonferrous Metals and Alloys). Metallurgizdat, 1955. The theoretical assumptions of pressworking and the fundamentals of rolling, drawing, pressing, and forging are discussed. Methods

Card 1/8

## Mechanical Equipment (Cont.)

SOV/3694

of determining the pressure of metal in plastic pressworking are presented. Equipment for pressworking of nonferrous metals and alloys is described and examples of rolling mills, die presses, and foundry equipment are given. Cold rolling methods for tubular stock are described in some detail. Information on auxiliary equipment and off-line mechanisms is included. The text contains numerous drawings, photographs, and diagrams. Authors of books given in bibliography are mentioned in the foreword. There are 47 references, all Soviet.

### Introduction

#### Ch. I. General Arrangement of Rolling Mills

1. Classification of rolling mills
2. Arrangement of rolls in the housing
3. Layout of stands of various rolling mills
4. Diagram of the layout of mills for rolling copper and copper alloy sheets
5. Shops for rolling aluminum and aluminum alloy sheets
6. Shops for rolling wire and merchant bars

3

5

5

6

8

11

15

19

Card 2/8

ZVEREV, G.I.

PHASE I BOOK EXPLOITATION

SOV/3356

25(1)

Zholobov, Viktor Vladimirovich, and Grigoriy Ivanovich Zverev

Pressovaniye metallov (Extrusion of Metals) Moscow, Metallurgizdat,  
1959. 542 p. 4,250 copies printed.

Reviewers: S.I. Gubkin, Member of the BSSR Academy of Sciences,  
Professor, Doctor of Chemical Sciences (Deceased); L.V. Prozorov,  
Doctor of Technical Sciences; M.V. Rozanov, Engineer; and  
Ye. B. Zadov, Engineer; Ed. (Title page): I.L. Perlin, Professor,  
Doctor of Technical Sciences; Ed. (Inside book): V.S. Rzhiznikov,  
Ed. of Publishing House: M.S. Arkhangel'skaya; Tech. Ed.:  
Ye.B. Vaynshteyn.

PURPOSE: This book is intended for engineers, technicians, and  
students working or specializing in the manufacture of tubes,  
rods and shapes chiefly from nonferrous metals.

COVERAGE: This book contains material on the theory and practice  
of metal extrusion including a description of extrusion processes  
for a variety of metals and alloys. The construction, mounting

Card 1/19

ZHOLOBOV, V.V.; ZVEREV, G.I.; YAM, V.M., inzh., retsenzont

[Dies for the hot pressure working of metals] Instru-  
ment dlia goriachego pressovaniia metallov. Moskva,  
Mashinostroenie, 1965. 161 p. (MIRA 18:2)

ZHOLOBOV, V.V.; ZVEREV, G.I.; YAM, V.M., inzh., retsenzent

[Dies for the hot pressure working of metals] Instru-  
ment dlia goriachego pressovaniia metallov. Moskva,  
Mashinostroenie, 1965. 161 p. (MIRA 18:2)

9.3150,24.2120

77842  
SOV/57-30-3-8/15

AUTHORS: Demirkhanov, R. A., Gevorkov, A. K., Popov, A. F.,  
Zverev, G. I.

TITLE: High-Frequency Oscillations in a Restricted Plasma (Work  
Completed in 1958)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 3,  
pp 306-314 (USSR)

ABSTRACT: Oscillations observed in discharges are identified  
usually as plasma oscillations. However, Looney and  
Brown (see reference) observed some oscillations which  
occur only in presence of double layers on plasma  
boundaries. This is not in agreement with the theory  
of plasma oscillations. The authors here investigate  
the nature and excitation mechanism in plasma bounded  
by double layers and show that one obtains high-frequency  
oscillations due to oscillatory motion of secondary  
electrons in the potential well of the plasma. They  
used an apparatus similar to that of Looney and Brown  
(see Fig. 1).

Card 1 /7

# High-Frequency Oscillations in a Restricted Plasma

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SOV/57-30-3-8/15

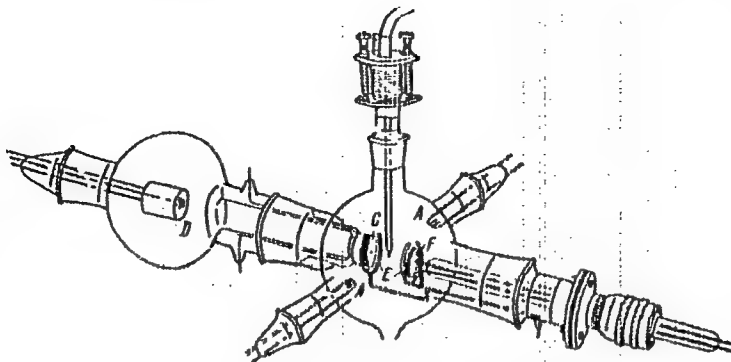


Fig. 1. Construction of discharge tube.

Plasma was produced between the oxide-coated cathodes A and anodes E. Electron beam, up to 3 kv of energy entered the region through C, and after crossing a distance L through the plasma, it would fall on F,

# High-Frequency Oscillations in a Restricted Plasma

77842  
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connected electrically to C. The potential well for electrons was caused by ion layers between annular anodes E and electrodes F and C. Variable voltage 0-400 v enabled large variations of ion layer thickness. Distance L between F and C could be changed 10-30 mm.

Working pressure was  $10^{-2}$ - $10^{-3}$  mm Hg, while the gases used were Ar, H<sub>2</sub>, and N<sub>2</sub>. A movable coaxial probe was collecting plasma parameters and oscillation frequencies, with the sensitivity of the registering device at  $10^{-11}$  v. The authors first derive an expression for the frequency inside the potential well  $f_0$  of electrons caused by secondary emission of electrons by primary beam on F:

$$f_0 = \frac{1}{4 \frac{d}{v} + \frac{2(L-2d)}{\sqrt{\frac{2eV_1}{m}}}}$$



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where  $d$  is thickness of ionic layer;  $\bar{v}$  is average velocity of electrons in layer;  $V_1$  is potential of plasma with respect to source of electrons. They found that these secondary electrons oscillating inside the potential well are responsible for the excitation of oscillations measured by the probe and listed in Table 1. Note that observed frequencies satisfy relation

$$f_n = n f_0 \quad (n=1, 2, 3 \dots).$$

Similar results were obtained for fixed potentials and variable  $L$ . A continuous flow of electrons oscillating inside the well could not produce an amplification of alternating fields unless a mechanism exists ensuring an orderly motion and enabling particles to give their energy to the alternating field. The authors show that such a mechanism of amplitude selection can exist provided there is an alternating field on the boundary of the plasma in addition to the constant field.

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Table 1.  $V_{\text{beam}} = 300 \text{ v}$ ;  $P = 7 \cdot 10^{-3} \text{ mm Hg}$ ;  $L = 20 \text{ mm}$ ;  
 $f_0$  is frequency computed from the potential distri-  
 bution;  $f_n = n f_0$  ( $n = 1, 2, 3 \dots$ ) are experimentally  
 observed frequency groups.

$U_{\text{bias}}$ V	$U_{\text{plasma}}$ V	$d$ mm	$f_0 \cdot 10^4$ cycles	$f_1 \cdot 10^4$ cycles	$f_2 \cdot 10^4$ cycles	$f_3 \cdot 10^4$ cycles	$f_4 \cdot 10^4$ cycles	$f_5 \cdot 10^4$ cycles
120	16	2.0	125	—	—	490	595—660	710—790
140	14	2.2	135	—	—	530—560	630—720	760—860
160	12	2.4	145	—	—	540—600	660—765	820—900
180	11	2.8	152	—	—	570—630	630—795	870—920
200	11	3.0	158	—	460—485	580—660	710—835	—
220	11	3.2	164	—	470—510	620—680	760—860	—
240	10	3.5	169	310—345	460—535	640—710	795—870	—
260	10	3.7	173	330—360	490—540	660—740	820—920	—

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This mechanism is applicable for frequencies lower than the plasma frequency since because of fast damping of such alternating fields inside the plasma they remain concentrated on the surface of the plasma. The authors also show that the mean free path  $l$  of the electrons is of fundamental importance and must be at least equal to  $2L$ . When  $l$  was adjusted to approximately 6 cm, oscillation vanished at  $L = 3$  cm. Also, the authors investigated influences of plasma densities and widths of the excited frequency groups. They found that phase focusing plays a substantial role at high amplitudes of oscillations. They observed sometimes in the plasma of the primary discharge, oscillations caused by electron oscillations in the potential well of the cathode potential drops. All oscillations were accompanied by electromagnetic radiations discernible by antennas placed outside the discharge tube. The authors believe that the oscillations observed by Looney and Brown and, most probably, by other authors are connected to the

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mechanism of amplitude selection. Ya. B. Faynberg  
evaluated many results of the present paper. There  
are 9 figures; 2 tables; and 11 references, 1 Soviet,  
1 Dutch, 1 Irish, 1 U.K., 7 U.S. The 5 most recent  
U.K. and U.S. references are: D. Gabor, IRE Trans.,  
AP-4, Nr 3, 526 (1956); T. K. Allen, R. A. Bayley,  
K. G. Emeleus, Brit. J. Appl. Phys., 6, 320 (1955);  
D. K. Looney, S. C. Brown, Phys. Rev., 93, 965 (1954);  
D. Bohm, E. P. Gross, Phys. Rev., 75, 1851, 1864 (1949);  
79, 992 (1950).

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Card 7/7

*Powder Metallurgy*

...the formation by wetting of titanium carbide compacts made of different grades of titanium carbide showed that best permeation and wetting was obtained with titanium carbide obtained by heating TiO<sub>2</sub> with lump-luck in a vacuum for 2 hrs. at 1150°C. Titanium carbide prepared in this way contained practically the theoretical amount of combined carbon (19.1%) and had a correspondingly low residual oxygen content (about 1%). Formation and wetting of commercial grades of titanium carbide, containing less carbon and more residual oxygen, was not complete, and one sample which had given rise to the "porous core" defect when added to tungsten carbide-cobalt mixtures remained completely unpermeated. The relation between the appearance of the "porous core" defect and the content of

carbon and residual oxygen content of the titanium carbide was confirmed by experiments in which tungsten carbide-titanium carbide-cobalt compacts were sintered. The formation of this defect is ascribed to the evolution of carbon monoxide on recrystallization of "low-carbon," "high-oxygen" titanium carbides at the sintering temperature when in contact with the molten binder.

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authors investigated the solubilities of  $K_2TaF_7$  and  $K_2CbOF_6 \cdot H_2O$  to improve the technology of sepn. of Ta and Cb, particularly from the waste solns. of Ta manuf. which contain Cb, and investigated the system  $K_2TaF_7$ - $K_2CbOF_6 \cdot H_2O$ -HF. In the soly. expts. 1% aq. soln. of HF was used; this concn. sufficed to prevent hydration and formation of complex insol. salts. The Ta salt used in the expts. contained 0.053% of impurities (Fe, Si, Zn, Sn), and the Cb salt about 0.13%. The soly. tests were made at 20 to 75° in 1% HF (aq.) individually for each salt. The ratio of solubilities of  $K_2TaF_7$  to  $K_2CbOF_6 \cdot H_2O$  was found to be 1:12 at 20° and 1:11 at 75°. This agrees with previously published results of Ruff and Schiller (C. A. 6, 839). It was also found that  $K_2TaF_7$  is insol. in the presence of  $K_2CbOF_6 \cdot H_2O$ . Soly. isotherms of the pseudo-ternary system  $K_2CbOF_6 \cdot H_2O$ - $K_2TaF_7$ -HF (1% aq.) were investigated at 21 and 60°. These were obtained by adding the Cb salt to satd. solns. of the Ta salt in aq. HF. It was shown that  $K_2TaF_7$  is pptd. as the Cb salt is added. The satn. concn. of the Ta salt (0.05%) is attained when 1.5 to 1.7% and 3.5 to 3.7% of Cb salt is added at 21 and 60° resp. The most rational com. method of sepn. of Ta and Cb consists in treating solns. of  $Ta_2O_5$  and  $Cb_2O_5$  in HF, with KF or KCl-HF. The vols. of solns. should be adjusted so that upon addn. of HF the concn. of  $K_2CbOF_6 \cdot H_2O$  is near the satn. point. This treatment ppts. practically all of the Ta; the  $K_2CbOF_6 \cdot H_2O$ , nearly free from Ta, remains in soln. The Cb salt is then crystd. out by heating. 3 references.

B. N. Danilov

ATA-ILA METALLURGICAL LITERAT

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Behavior of titanium carbide in hard alloys. G. A. Meerson, G. L. Zverev and B. R. Osinovskaya. *J. Appl. Chem. (U. S. S. R.)* 13, 66-75 (in German, 75) (1940).—Ti carbide contg. 10.2% C and a small amt. of residual O was obtained at 1420° and 0.14 mm. pressure. It was more granular than ordinary commercial prepreg because of the low temp. of formation. The best carbide for use in sintered alloys is low in O. The better the quality of TiC, the higher is the degree of penetration of fused Co. A. A. Podgorny.

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

REGIONAL SYMBOLS										SUBJECTS									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

*Chem* The ternary calcium-chlorine system. *Chem. Zvezdy. Doklady Akad. Nauk S.S.S.R. 104, 242-4 (1963).*  
The quaternary Ce-CeCl<sub>2</sub>-CaCl<sub>2</sub>-Ca diagram was constructed from free-surface-energy data (Raynor, C.A. 43, 690 (1963)); it consisted of 2 ternary systems: Ce-CeCl<sub>2</sub>-CaCl<sub>2</sub> and Ce-CeCl<sub>2</sub>-Ca. Three immiscible double-layer regions were found, and 2 ternary eutectics. The crystal line of the binary Ca-Ca eutectic is located below the formation region of 2 liquid phases. A provisional Ca-Ce-Cl m.p. diagram was constructed that, in spite of its provisional nature, is expected to give valuable information on the complex m.p. and crystal processes of CeCl<sub>3</sub> reduction.  
W. M. Steinberg

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